March/April 1987

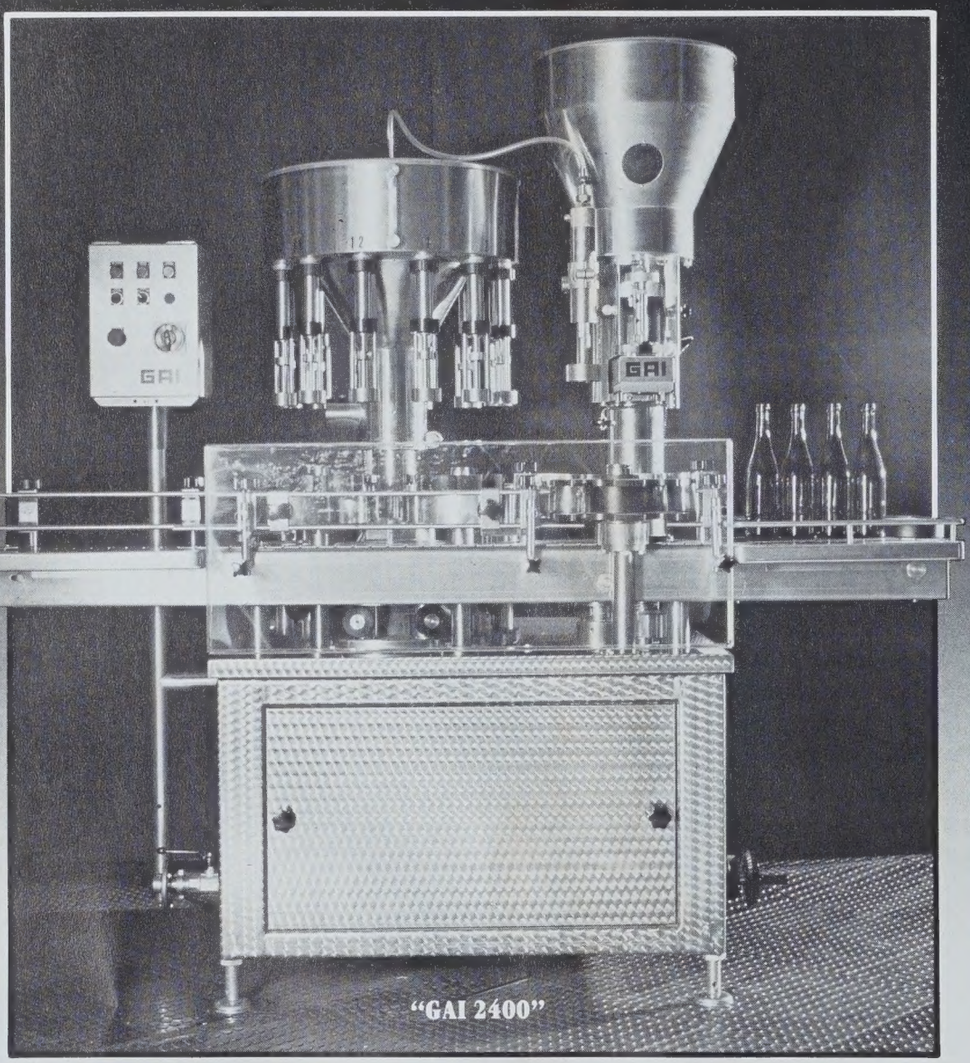
PRACTICAL WINERY

Grapegrowing • Winemaking • Marketing

- Attitude is Key to Wine Sales
- Control of Grape Powdery Mildew
- Riesling in Germany

BULK RATE
U.S. POSTAGE
PAID
SAN RAFAEL, CA
PERMIT NO. 303

MEET THAT FAMOUS ITALIAN BOTTLER



"GAI 2400"

And world's best seller

The GAI Monoblock Filler/Corker

- Least oxygen pick up of any monoblock filler/corker
- Converts easily to bottle shape and size
- Handles "½ size" bottles up to magnums
- 100% stainless steel
- Easy-clean special mouth edge openings
- Makes sterilization a simple process
- [illegible] lubricating to reduce maintenance
- [illegible]o suit every need

PECO

The GAI monoblock filler/corker in sizes of 1500, 2400, and 3000 bph is now available in the U.S. exclusively from:

Peco, Prospero Equipment Corp.
134 Marble Avenue
Pleasantville, NY 10570
(914) 769-6252

San Fernando, CA
(818) 365-4403

Santa Rosa, CA
(707) 523-2900

Portland, OR
(503) 287-2624

Muscatine, IA
(319) 263-4410

SCOTT TALKS #1: First in a series of informal discussions.

A day in the life of an unusual detective.

Kent Sakato,
Lab Director

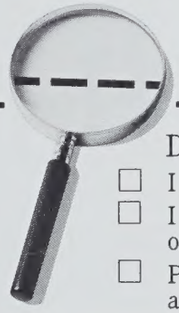
"Every day is different, and every job is a mystery to be solved...sometimes in an hour, sometimes it takes weeks. The most challenging involve wines with something wrong—taste or smell, or an unexplained cloudiness. It's fascinating, just fascinating."

Kent is a thorough, professional wine detective with B.S. and M.S. degrees in food technology and enology from U.C. Davis. He was associated with two wineries before joining Scott Labs over eight years ago.

"Some months we run over 3500 tests on wine alone. We not only solve mysteries, we verify findings from our customers' labs, we are constantly testing our own products such as corks and filter sheets, doing water tests and certifying winery inventories. It's a mixed bag. One of the things we are doing today is analyses of leachable metals in filtersheets."

The number of challenges met in the course of a year at Scott Labs is staggering...but it has given Kent and his staff a wide exposure to an almost unbelievable variety of problems. This kind of experience is immensely valuable to customers who face a particularly knotty mystery.

The wine industry is fortunate Kent decided to become a research enologist. Like others in our 50 year history, he serves with enthusiasm, dedication and discretion...all virtues of a first rate detective.



Dear Scott Labs:

- ☐ I have a mystery that needs solving. Please call at once.
- ☐ I suspect we could make use of a visit by one of your "detectives" or other such expert. I'd like to discuss it first by phone.
- ☐ Please send me a free brochure describing laboratory services and supplies. Skip the detective stuff...I prefer westerns.

Name _____ Title _____

Firm Name _____

Address _____

City/State/Zip _____

Telephone _____ Best time to call: _____

SCOTT LABORATORIES

2955 Kerner Blvd.
San Rafael, CA 94901
(415) 457-8460

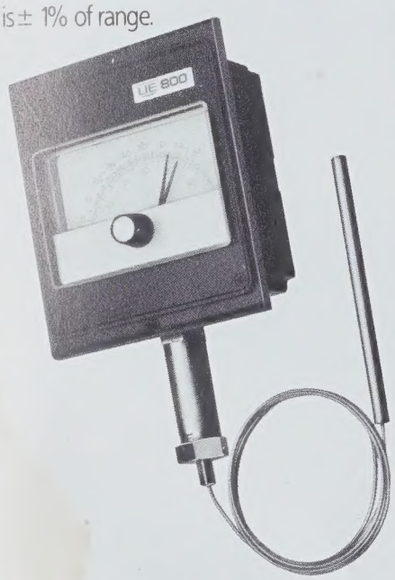
Supplies, equipment and laboratory services for the wine industry since 1933.

In Canada: Scott Laboratories, Ltd.
950 Brock Road South • Pickering, Ontario, Canada L1W 2A1
(416) 839-9463

THE MAILBAG

Wine tank temperature controls

The industry standard for wine fermentation control now offers increased corrosion resistance with a Lexan® enclosure & dual scale (°F & °C) indication. The 800 Series features a highly readable, 4" setting/indicating scale with 1°F dial divisions over 0° to 100°F. The Lexan enclosure is standardly fully gasketed and has a single 15 amp snap switch. The rugged, stainless steel thermal assembly has non-toxic fill; repeatability is ± 1% of range.



Please send Bulletin 800W

Name _____

Company _____

Address _____

City _____

State _____ *Zip* _____

_____

East Coast
West Coast

tric
Company

35 Schoo
Water own,
elex 92-2445
OMNIFAX 1-617-926-973

Dear Jake:

First, let me congratulate you on your column. Anyone who can write a wine column and not mention wine wins my undying admiration.

I make my living as a wine writer. The scope in Australia is so great, I live very well. There is only one catch—my editors seem to want me to mention wine. Makes life tough, not to mention dull.

Seriously, I really do appreciate your column because it isn't full of the usual bullshit other wine writers go on with—more power to you. I was tipped off to your writings by David Hohnen, who is the winemaker at Cape Mentelle Vineyards in Western Australia. Hohnen, who studied his winemaking at Fresno, is a devoted fan, and I have to admit I am also hooked.

If you ever get out this way, make sure you look me up. We have a very exciting wine industry and some great characters, so you would be sure of an interesting time. In the meantime, if you get a chance to try David's Cape Mentelle or Cloudy Bay wines, I'd be interested to hear your comments.

They are slightly neanderthal, but very honest. I'll try to con him into sending you some bottles. I should also point out that I have no affiliation with the vineyard, or Hohnen; it is just that he is one of Australia's better wine smiths and he fancies himself with a glass in his hand.

Finally, why don't you contemplate writing for some of the Australian magazines? *Wine & Spirit* is probably the best bet, so why not submit a letter from America? I'm sure the editor, Suzanne Fisk, would give it favourable consideration. The address is 21 Harris Street, Pyrmont 2009 Sydney.

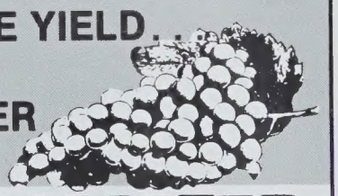
I don't have any shares in the publication, but I contribute a monthly column called Rough Marc. They pay promptly and well, although in your case you would be disadvantaged by our wobbly dollar. Still—give it some thought; I'm sure your writings would be well-received here—you might even have a fan club formed in your honour. Don't laugh—I've got mine, called the Noble Order of Rough Marc, which meets monthly and vows to get drunk without ever talking about wine. I'm too shy to join them, but I admire their sentiments.

Nice to make contact, and keep up the entertaining column.

Yours with a liver classified by the national trust,

Mark Shield, freelance wine writer
80 Lincoln Street
Richmond 3121
Melbourne, Australia

MORE YIELD.. LESS WATER



IRROMETER

FINEST TENSIOMETER

GRAPE GROWERS KNOW...

that good yields and quality are not achieved by accident. They also know that cutting irrigation costs (water and power) requires top management. For over 35 years, thousands of growers have relied on IRROMETERS, because they're accurate, easy to use and inexpensive. Plus they get results! Act Now!

☐ Send me FREE 20 page booklet

IRROMETER CO.
BOX 2424 RIVERSIDE, CALIF. 92516
Telephone: (714) 689-1701

Dear Editor:

Congratulations go to you. I have learned a hell of a lot from your excellent magazine. In fact, I believe I may have used your issue on Gewurztraminer and/or Riesling when I made two award-winning wines.

Let me also say that as an Eastern wine booster, I really appreciate—and respect—your efforts to look beyond California in covering the ins and outs of American winemaking.

One thing that really struck me on a one-week wine-oriented visit to California not so long ago was how smugly chauvinistic the state seems to be about wine—truly, not much different from Italians in Italy or French in France.

Without question, California has plenty to be proud of—just as Italy and France do. But there *is* another world out there, and the fact that you are going out of your way to recognize that is to your credit.

Keep up the good work.

Sincerely,
John C. Given
Brooklyn, NY

Dear Editor:

A note of sincere thanks and appreciation to Stan Hock for including Caymus Vineyards and Liberty School in his insightful column titled 'California Wine, in Segments' (*PW* Jan./Feb. 1987). I must, however, offer a humble correction in Stan's attribution of the phrase 'fighting varietals' to me. This phrase, in fact, is that of Jon Fredrikson, editor of *The Gomberg-Fredrikson Report*. But I must admit that I keep this appropriate phrase at the top of my 'Wish I Had Thought of That One' file. Again, thank you, Stan!

Sincerely,
John Skupny, Marketing Director
Caymus Vineyards/Liberty School wines
Rutherford, CA

A NEW LINE OF HEAT PUMP EXCHANGERS

COLD STABILIZATION — FERMENTATION — DESLUDGING
— MALO LACTIC FERMENTATION —
— CONSISTENT TEMPERATURE STORAGE —

KREYER®

A PRODUCT OF PED

France head office
4, rue de la Michodiere
75022 Paris

U.S. Eastern representative
Jacques & Liliane Recht
P.O. Box 1149
Oak Grove, VA 22443
(804) 224-0462

U.S. head offi
Pedia Kreyer
1977 O'Too
B109
San Jose, CA
(408) 922-0

More than 1800 wineries in France, Italy, Spain and other European countries have our heat-exchangers. Pedia Kreyer's American subsidiary recently opened in California.

FOR THE CALENDAR

May 5–9, 1987

Oenotech 87

Oenotech 87, an international exhibition for viticultural and oenological equipment, including a wine producers' section, will take place at Palexpo, the new exhibition and conference center outside Geneva, Switzerland. Oenotech is the first combined trade fair in Switzerland for both wine producers and the manufacturers of winegrowing equipment. The trade fair will include manufacturers of viticultural and oenological equipment, wine producers and dealers, cellar cooperatives, and national and regional bodies concerned with wine promotion.

The scope of the exhibition, which will include workshop sessions, covers vine treatment; harvesting; wine treatment; vinification and cellar equipment; bottling and packaging equipment; transportation, handling, and warehousing equipment; and wine producers.

For further information, contact Orgexpo, Oenotech 87, P.O. Box 112, CH-1218 Grand-Saconnex/Geneva, Switzerland; phone 22/98 11 11; telex 422 784 expo ch.

June 22–26, 1987

World Wines and Spirits Week

The fourth annual World Wines and Spirits Week will take place this year in Bordeaux, France. WWSW features two major exhibitions, Vinitech 87 and Vinexpo 87.

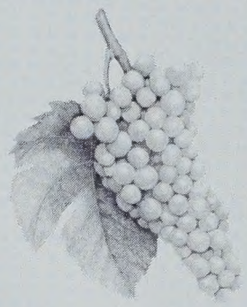
Vinitech 87 is geared toward the exposition of vinicultural equipment for interested professionals. The exhibition area has been increased by 20% over previous shows to accommodate the 300 exhibitors. Exhibitions will include vats, barrels, and cellar equipment; bottling and labeling machines; harvest and wine processing equipment; packaging and shipping equipment and machinery; enological product lines; and data processing, software, trade reviews, and organizations.

Vinexpo 87 exhibitors will include over 1,000 negotiants and producers from 21 countries. The exhibit area will be increased this year by 40% over previous shows, and the number of exhibitors by 25%.

There will be an international wine-tasting competition organized by the promotion committee of the Hauts de Gironde. Conferences and seminars will include wood and wine quality, advancements in packaging of wines and spirits, marketing approaches to packaging, and cryo-extraction.

For further information, write or call Vinitech, Parc des Expositions, B.P. 55 Grand Parc, 33030 Bordeaux Cedex, tel. 56 39 55 55, telex 540 365 F; or Vinexpo, 12, place de la Bourse, 33076 Bordeaux Cedex, tel. 56 90 91 28, telex 572 810 F and 541 048 F.

SWK Filter Sheets take the Bugs out of Filtration



SWK-SUPRA EK
and
SWK-SUPRA EK 1
for reliable sterilizing
Filtration without
Membrane post-filtration

SWK-SUPRA 80
and
SWK-SUPRA 50
for best possible
Membrane Protection

SWK-SUPRA =
Super Performance,
Super Reliability

SEN MACHINES INC. - U.S. REPRESENTATIVE FOR:

- SEITZ ENZINGER NOLL - Bottling and filtration equipment
- SEITZ FILTER WERKE - SWK Filter Sheets and Membranes
- MORLO - PVC heat-shrink capsules
- ERBSLOEH, Geisenheim - Wine and Juice fining materials
- WILLMES - Tank and Universal presses

sen

SEN MACHINES INC.

3095 KERNER BLVD., SUITE G SAN RAFAEL, CA 94901-5480
TELEPHONE: 415-457-5155 TELEX: 288978

SUBSIDIARY OF SEITZ ENZINGER NOLL MASCHINENBAU AG AND SEITZ-FILTER-WERKE THEO & GEO SEITZ • BAD KREUZNACH, W.GERMANY

Exclusive East Coast Representative:
JUERGEN LOENHOLDT - R.D. 1, Route 14, Himrod, NY 14842 (607) 243-7568

A NEAT DESK
Is The Sign Of A SICK MIND

TRUE ☐ FALSE ☑

Neatness, we believe, is a virtue. To aid you in your pursuit of virtue, we offer **PW** binders, an efficient way to organize all those copies of **PW** you've accumulated over the years.

Send $5.00 + $2.00 postage and handling per binder to:

PRACTICAL WINERY
Grapegrowing and Winemaking Review
15 Grande Paseo
San Rafael, CA 94903

Now that's what we call easy virtue.

CONTENTS

PRACTICAL WINERY
Grapegrowing • Winemaking • Marketing

MARCH / APRIL 1987 VOLUME VII, NO. 6

Features

MARKETING

23 Attitude is Key to Wine Sales ..... *Joe Tarantino*

VARIETAL REPORT

25 The Noble Riesling in Germany ..... *Ray & Eleanor Heald*

WINERY DESIGN

34 Winery Electrical Distribution Problems ..... *Ken Arthur*

FINANCE

38 Contingency Planning ..... *George M. Schofield*

VITICULTURE

40 Control of Grape Powdery Mildew ..... *Carole Taines*

45 Weather Stations Assist Growers

PURCHASING GUIDES

37 Marketplace

50 What's Available in Pumps?

58 Advertiser Product/Service Index

Departments

8 Spotlight

10 Book Reviews

13 Winery Water & Waste ..... *David Storm*

19 The Wine Retailer ..... *Stan Hock*

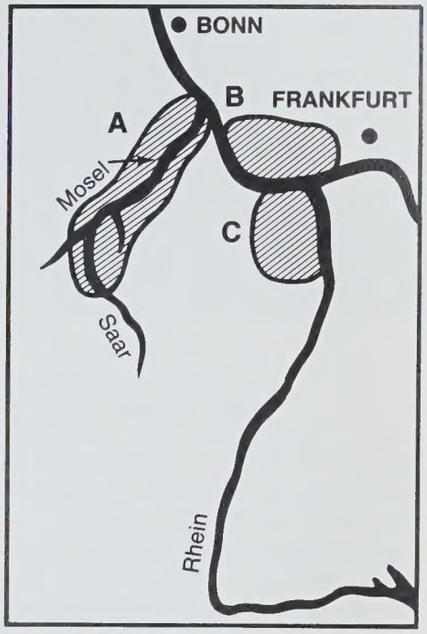
16 PRACTICAL WINERY Library

17 PRACTICAL WINERY Subscription Form

43 Bookshelf

Editor and Publisher: Don Neel
Managing Editor: Diane Mayfield
Writing Staff: Don Blackburn, Ray & Eleanor Heald, Stan Hock, R. Corbin Houchins, Ralph Hutchinson, Jake Lorenzo, George Schofield, Carol Shelton, Rhoda Stewart, David Storm, Carole Taines, Joe Tarantino, Bruce Zoecklein
Advertising Manager: Susan Malone
Printing: Barlow Printing, Inc., Petaluma, CA
Production: Art IV Design
Typesetting: Barlow Typesetting, Inc., Petaluma, CA

Offices: Advertising, Circulation, Editorial: 15 Grande Paseo, San Rafael, CA 94903 USA (415) 479-5819.
PRACTICAL WINERY (ISSN 9739-8077) is owned and published by D.F. Neel. Editorial/Business Office: 15 Grande Paseo, San Rafael, CA 94903 (415) 479-5819. Published bi-monthly at subscription rate of $30.00/year. Outside the United States, please add $6.00US sea mail; $16.00US, air mail. Application to Mail at Second-Class Postage Rates is Pending at San Rafael, CA. Postmaster; please send change of address to 15 Grande Paseo, San Rafael, CA 94903. Back issues: $5.00 prepaid. News media may use no more than 1/4 page of material per issue provided that *PRACTICAL WINERY* is credited.



Three regions featured in German Riesling Varietal Report:
A—Mosel-Saar-Ruwer
B—Rheingau
C—Rheinhessen
See page 25.

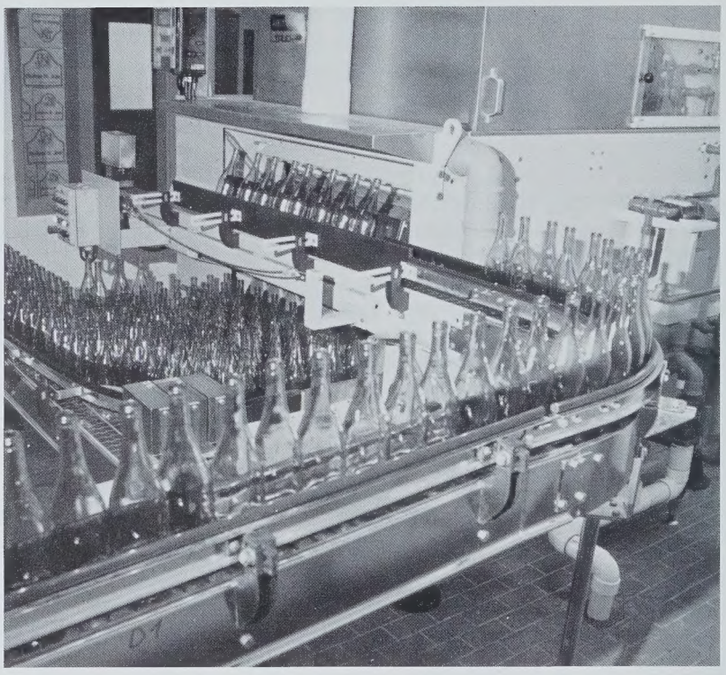
Wine by the glass is a key to wine sales. See page 23. *Photo by Joe Tarantino.*

Cover:

Pfalz Castle on the Rhein River and Gutenfels Castle on the slope in the Mittelrhein region of Germany. *Photo by Ray Heald.*

"A man cannot make him laugh; but that's no marvel, he drinks no wine." *William Shakespeare (1564-1616)*

New Installations



New Chateau St. Jean Bottling Line

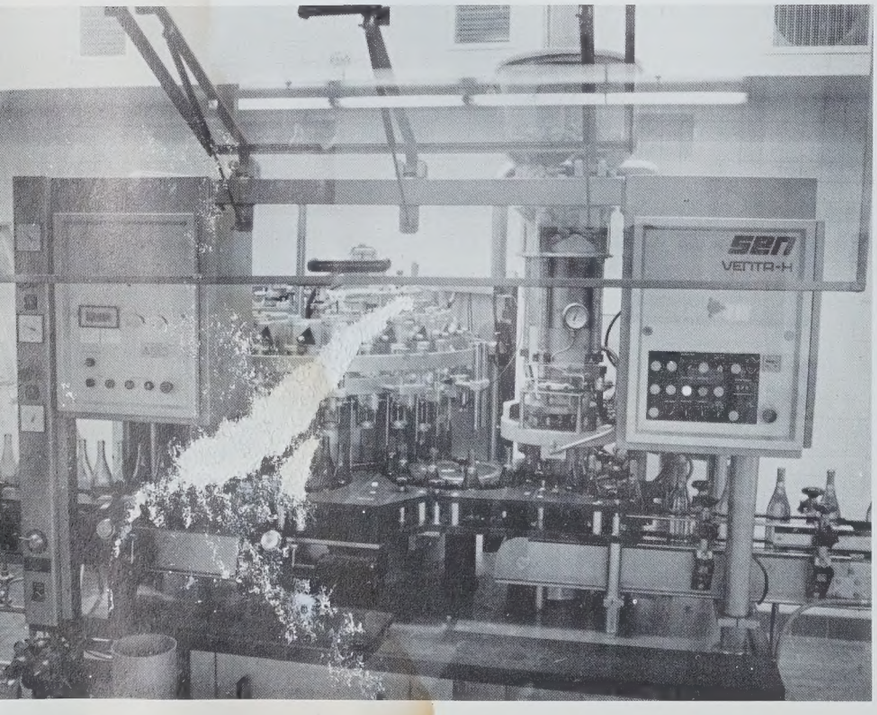
Chateau St. Jean, Kenwood, CA, has installed a new 75-bottle/minute bottling line this year. Equipment includes the first SEN ozone bottle sterilizer installed in California and the first SEN H-series 24-spout filler, as well as the first BEER mono-block capsule dispenser/foil spinner installed in the U.S. An Anker Roland 8/2F labeling machine capable of applying front, back, and neck labels completes the line connected by an SEN conveyor system.

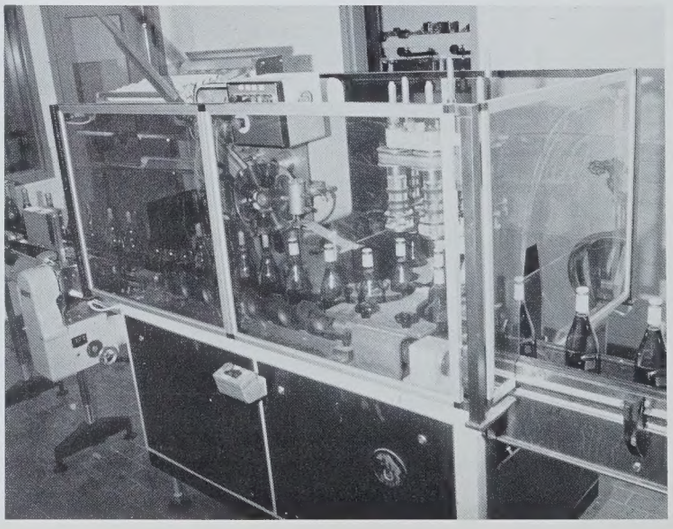
The new equipment from SEN includes a Tauch-Stella 2/8-G Jet-ozone bottle sterilizer, which provides full sterilization of 4500–5000 bottles/hr. Bottles are first completely submerged in an ozone-treated water bath, drained, then sprayed internally with ozone-treated water. Next, the bottles are rinsed internally with sterile water and finally sparged internally with sterile air. The ozone used for water treatment is supplied by a separate ozone generator which produces a continuous supply of ozone from the atmosphere.

The SEN Venta H2/24-4NK is the latest counter-pressure filler using filling valves fitted with SEN's patented 'Trinox' leveling system. The Venta can handle wines with a wide range of CO_2 levels. As the bottle moves into the filler, it is first pressurized with inert gas, then filled with wine to a pre-determined fill level. The 'Trinox' system built into the filling valve provides fill heights of +/–1.0mm, and a final topping of inert gas. Under normal filling conditions, oxygen pickup is less than 0.5 ppm.

The SEN Greif 4-head corker has SEN 4-piece iris-style cork-jaws, for smooth, crease-free operation which require no lubrication and can be removed easily for cleaning without tools. The corker has a flaming device which can heat the cork jaws to provide sterilization, and a vacuum system which pulls a vacuum on the bottle head space prior to corking.

The BEER Belomat Kamp 6/AR capsule dispenser/foil spinner provides automatic dispensing and spinning of tin-lead capsules using a vacuum de-nesting system, providing damage-free capsule separation. There are sensors to regulate capsule application with bottle flow, and a no-cork/no-capsule device to prevent capsuling of a bottle without a cork. Tin-lead, poly-aluminum, or PVC capsules up to 70 mm long can be used.



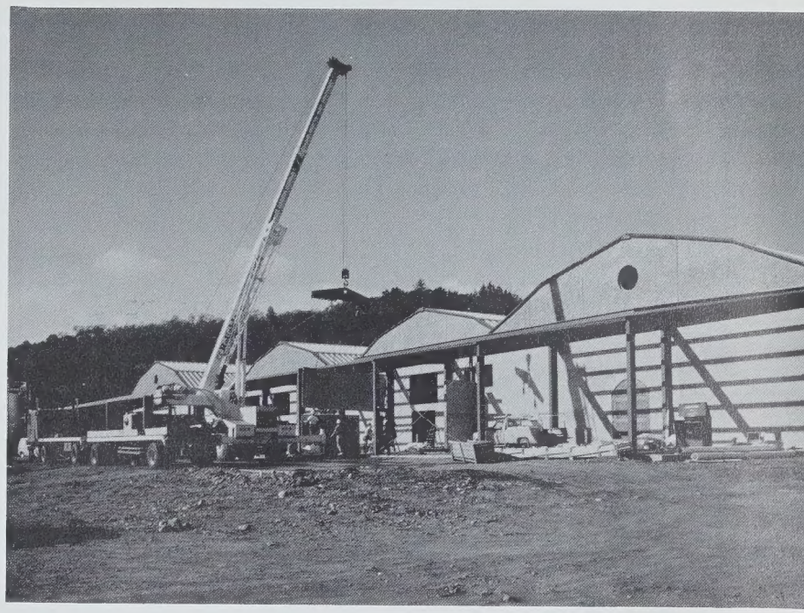


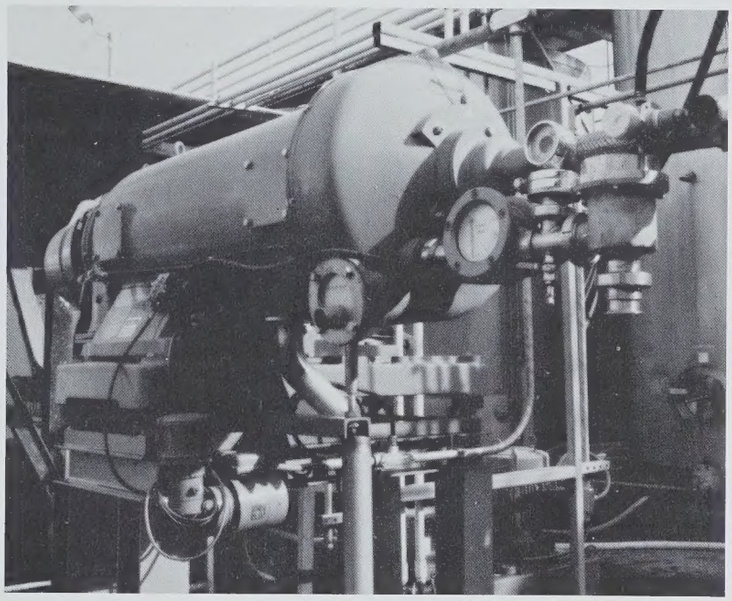
New Beringer Vineyards Building

Beringer Vineyards has added a new storage building for barrel-ageing of wine to its St. Helena, CA, facility. Designed by Valley Architects of St. Helena, the 55,000-square-foot building features a four-bay 'Gambrel' roof. Oak Valley Construction of Oakdale, CA, was the general contractor on the project and American Building Company provided the steel frame and roof. Beucon Building Systems manufactured the insulated concrete sandwich wall panels in Oakdale and trucked them to the building site.

The 'Beucor Panel System', as the concrete sandwich wall panels are known, was developed in 1980 as a cost-competitive, quickly-erected, and energy-efficient alternative to conventional construction methods.

The Beucor Panel System combines a strong but flexible pre-engineered steel frame with a 'hard-wall' system. The panels have an insulation rating of composite 'R-20', a two-hour fire rating, and a thermal mass of 62 lbs/sq.ft. of panel. They are available in a variety of exterior finishes, including a smooth trowel and an aggregate finish. Rapid installation and reduced energy requirements are further advantages.





New Hinman Vineyard Crush Equipment

Hinman Vineyards in Eugene, OR, installed a new crush station in 1986. In addition to a 5,000-liter Europress and Demoisy model D-8 stemmer/crusher, the winery installed the first known load-cell-suspended grape dump hopper in the U.S.

Dumping and weighing takes place in the same hopper. Prior to dumping a container of grapes, the auger/gate to the crusher is closed, the recording controller is set to zero, and the load is dumped. An immediate read-out on the net weight of grapes dumped is given. The gate is opened and production continues. The hopper capacity is 5,000 liters. (Other size hoppers are available.) The sides of the hopper are steeply sloped for gravity flow of grapes to the auger. The load cells are strain gauges and have the potential of long life with higher accuracy than many other scaling devices.

With purchase of the suspended-design dump hopper, Hinman was able to operate without a truck scale. This reduced the investment and expedited dumping, as it is not necessary to unhook gondolas, weigh, and rehook after dumping.

The partners, Doyle Hinman and David Smith, feel that they made the best possible equipment selection available, as it simplified the crush station and saved them considerable money. Total tonnage handled by the new equipment was 240 tons.

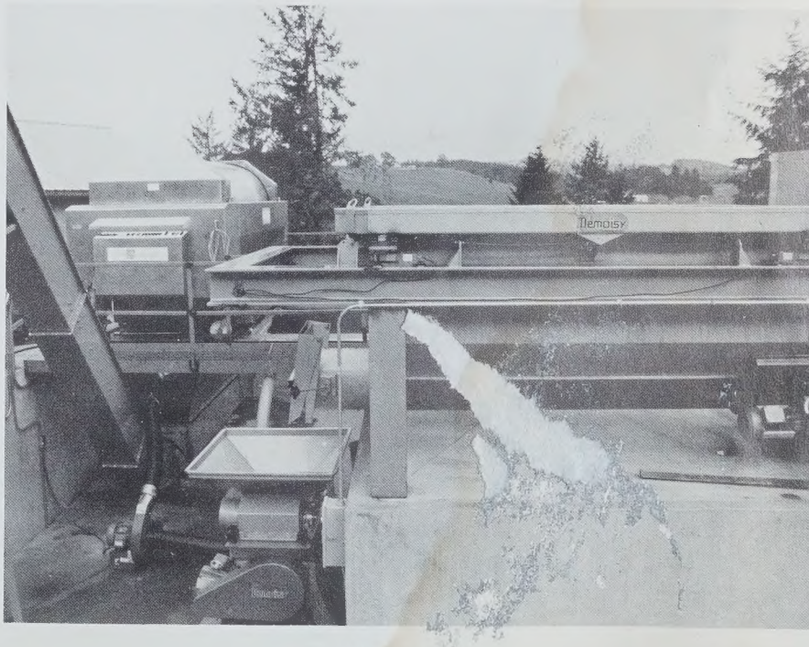
New Decanter Aids Beringer Vineyards

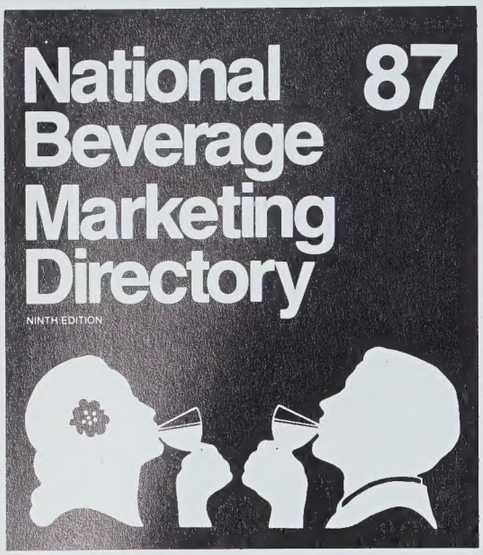
A Westfalia juice-design continuous decanter Model CA 365-010 with analog-type hydrodrive control was installed and operated during the 1986 harvest at Beringer Vineyards, St. Helena, CA. The decanter processed grape juices averaging 10% insoluble solids at average feed capacities of 4,000 gph.

The new decanter is being used primarily to improve handling of Chenin Blanc and white Zinfandel. Beringer increased production of white Zinfandel by 20% in 1986, while their production of Chenin Blanc was up 10% over 1985.

The process involves 0 to 4 hrs of skin contact in a 50-ton drain tank positioned over a 22,500-L tank press. Free run and initial press juice to 0.2-bar pressure were combined in one holding tank, while the remaining press juice was kept separate. Juice higher than 2% solids was clarified in the decanter to achieve 1% solids before inoculation for fermentation. Change-over time for cleaning when switching from one grape to another was ½ to 1½ hours.

Batch sizes ranged from 5,000 gal to 23,000 gal through the decanter. Total yields were 179 gal/ton on Chenin Blanc and 185 gal/ton on white Zinfandel.





National Beverage Marketing Directory, Ninth Edition
Beverage Marketing
Mingo Junction, OH; $345

National Beverage Marketing Directory is an exhaustive survey of the U.S. beverage industry. In addition to listing products and services for non-wine beverages, the directory includes 1,950 wine and spirits wholesalers; wineries; alcoholic beverage importers; beverage industry suppliers, classified by product or service; plus federal regulatory agencies and trade associations. Over 800 Canadian listings are also included .

For suppliers, the directory is a valuable guide to who's buying what and how much. A large cross-referenced roster of beverage personnel is provided as well. The directory also serves as a catalogue of current and potential customers.

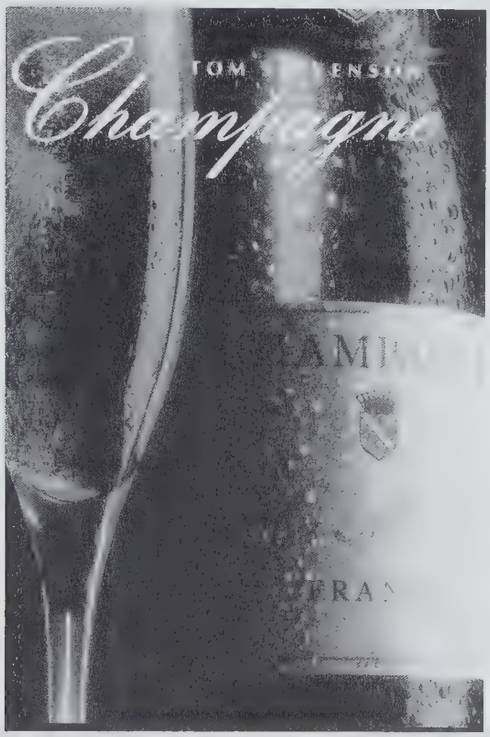
The 1,000-page-plus 1987 edition includes market trends and statistics for six major beverage categories, including wine. A new section for 1987 lists every brand in the U.S.—over 4,000 brands are listed in all.

The directory is particularly useful in that it provides names of executives whom you may want to contact, saving you valuable time. It is also a source of information to help solve marketing problems, search out new outlets of dis-

BECO
FILTER SHEETS and FILTER AIDS
KLR
BUCHER VASLIN UNIPEKTIN SANOPLAST
KLR Machines, Inc.
47 West Steuben Street (607) 776-4193
Bath New York 14810 • Telex: 510-252-1250
KLR Machines, Inc.
1925-B Francisco Blvd. East (415) 456-4774
San Rafael, California 94901 • Telex: 380-753

tribution, preselect the most profitable contacts, and assess credit-worthiness of potential customers. This is a useful reference work for all wine marketers.

The directory can be ordered from Beverage Marketing, Box 126, Mingo Junction, OH 43938. It is available on a 15-day trial examination. The directory is also available on diskettes for use on IBM and IBM-compatible personal computers. For more information, write to the above address or call (614) 598-4133.



Champagne
Tom Stevenson
Harper & Row; New York; $39.95; 346 pages

Champagne is a detailed account of both the region and its most famous beverage, beginning with the development of Champagne as a sparkling wine and concluding with a discussion of the future of Champagne. In between, there are chapters on soil, vineyard classification, vine cultivation, vinification, the Champagne method, styles of Champagne, buying and storing Champagne, regional cuisine, and Champagne producers.

The book includes both fact and the author's studied opinion. For instance, a section covering the *sur lattes* scandal explores the underpinnings of that "blot on Champagne's copybook," as Stevenson refers to it. He then writes, "I have heard houses claim that it is in the *dosage* that they turn a simple *sur lattes* product into one worthy of the reputation of that house. Poppycock! I have heard others say that they are just as meticulous in seeking out wines *sur lattes* to match their house style as they are at buying in grapes, must, or *vin clair* and try to pretend there is no difference. Rubbish! Grapes, grape must, and *vin clair* are all raw products a long way short of the all-important *assemblage* stage and it is at the *assemblage* that such products may be rejected."

Champagne covers in-depth, technical information that will provide fascinating reading and a good reference source for any producer of méthode champenoise sparkling wine, as well as anyone interested in furthering their knowledge about one of the world's most respected beverages.

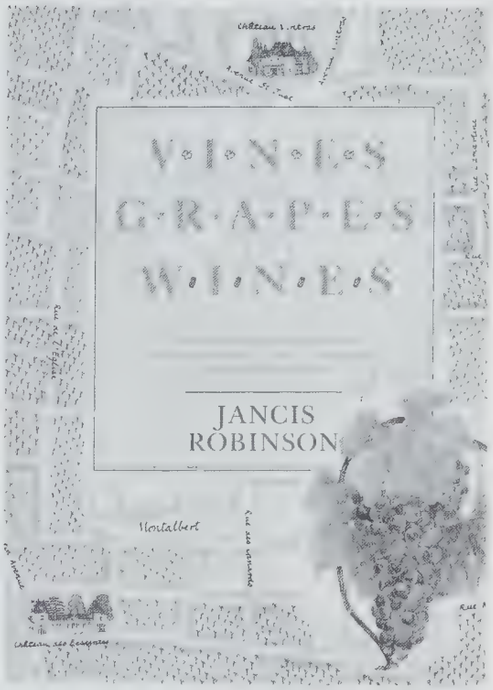
Color photographs, some covering two pages, further illustrate the text. The photographs range from the technical to the purely aesthetic, from blending into barrels to produce cask-fermented pink Champagne, to an almost ethereal view of Villedommange on a summer day.

Champagne is not light reading; it is quite clear that Stevenson is both serious and knowledgeable about his subject. The text is highly informative and very well-written.

Vines, Grapes, and Wines
Jancis Robinson
Alfred A. Knopf; New York; $29.95; 280 pages

Ampelography is the subject of Robinson's book, and she covers it well and thoroughly. *Vines, Grapes, and Wines* opens with a discussion of where grapes grow and why, then delves into an in-depth look at five great vineyards from France to Germany to California.

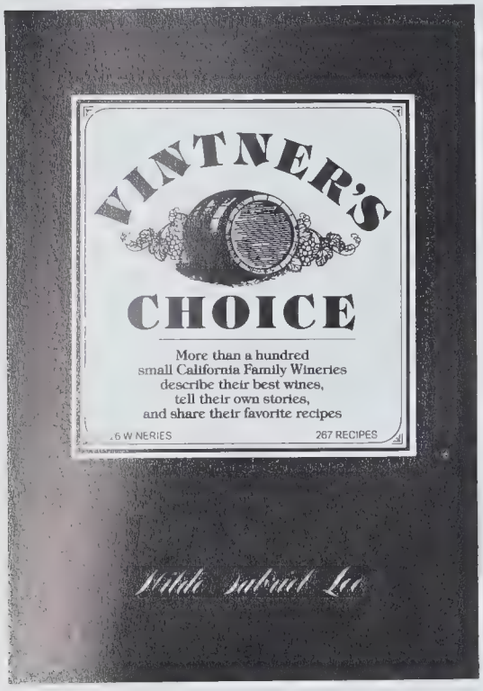
A discussion of the so-called 'classic' varieties—Cabernet Sauvignon, Pinot Noir, Syrah, Merlot, Riesling, Chardonnay, Semillon, Sauvignon Blanc, and Chenin Blanc—follows. Each variety is studied in minute detail, from leaf and cluster dimensions to the preferred soils, pruning methods, and rootstocks. Susceptibility is covered as well.



Twenty-nine 'major' varieties are discussed in nearly as much detail, and information is offered on other varieties by region. For instance, Petit Verdot and Carmenere are discussed in a section on Bordeaux. A section on Germany includes a discussion of Blauer Portugieser, while the California section covers Rubired and Durif. Even China is mentioned, with a brief discussion on Beichun. Drawings,

photographs, and maps add further insight into the subject.

This book is recommended as an excellent resource for viticulturists and vineyardists.



Vintner's Choice
Hilde Gabriel Lee
Ten Speed Press; Berkeley, CA; $13.95; 381 pages

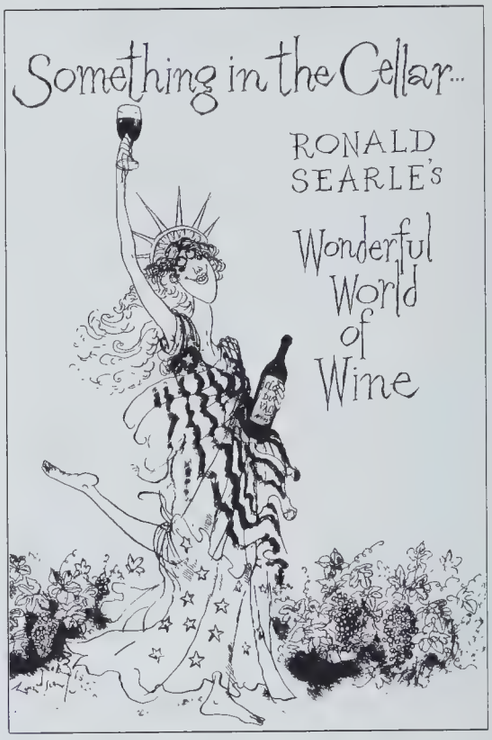
Vintner's Choice is a celebration of the pride and tradition of the small wineries of California. Lee sees these wineries as an experimental, innovative force, and traveled to each of California's wine regions to gather information from the individual wineries for this book.

The book combines the functions of wine lore, visiting guide, and cookbook. In the first half, organized by region, each of 125 wineries is briefly described, including the types of wines produced, a history, visiting hours, comments from the owners on how they started, and what they find appealing about winemaking.

The second half is an appreciation of winery personnel's knack for creating wonderful food to accompany their wines, and contains 200 recipes for everything from appetizers to desserts. Complementary wines are suggested with each recipe, and menu ideas are offered.

Vintner's Choice is illustrated with sketches of the wineries (in the first half) and winery labels (in the second half). An introduction gives a brief history of California wine production, and the first half includes current trends among small wineries. There is a glossary of winemaking terms and two indexes: one for wineries and one for recipes.

Vintner's Choice belongs in winery gift shops and in the library of wine lovers who want to learn about the people behind California's small wineries.



Something in the Cellar
Ronald Searle
Souvenir Press; London; $25.00; 78 pages

This book is a must for anyone who believes that wine can be fun (and who doesn't?). Searle's cartoons are wicked, droll, and insightful. A popular one is the entry for France in the 'Wine Ceremonies of the World' series. It depicts a burning truckload of wine stranded in the middle of a French highway which is covered with sharp nails and broken glass, and is titled 'Annual Festival of Welcome to Italian Wines'.

Searle's irreverent wit lampoons many such national idiosyncracies. Equally amusing are his various sketches on how to open a wine bottle. Apparently some people have never heard of an ah-so . . . .

This is a book for every wine lover who enjoys a good laugh over his favorite beverage. It is particularly appropriate for wine retail shops, and is available by mail from Clos du Val Wine Co., 5330 Silverado Trail, Napa, CA 94558. Please add $1.50 shipping charge to the $25.00 cost for a total of $26.50.

What doesn't go into your wine is as important as what does.

That's why you should take a close look at Kenite® diatomite filteraid.

In every step of wine production, from crushing and pressing to fermentation to storing, aging and finishing, Kenite will eliminate unwanted particles and residue.

But sparkling clarity isn't the only way we can help.

More economical operation.

You're the expert on wine. But you'll find our expertise on filteraids to be helpful, and economical.

Time and again, our technical experts show customers how a change in equipment or procedures will dramatically improve flow rates and clarity, while cutting filteraid costs.

And you can count on fast, reliable delivery from our plant in Gr[illegible] County, Washington.

The most important reason to consider Kenite is simply [illegible] our customers will get more out of your wine if you use the [illegible] that takes more out of it.

[illegible] **Specialties.**

For more details, write to: Inorganic Specialties Division, Witco Corporation, 520 Madison Avenue, New York, NY 10022-4[illegible] or call 212-605-3644.

Witco

?

Questions and opinions wanted. Write to Practical Winery.

Winery Water & Waste

D.R. Storm, Ph.D., P.E.

Wastewater Monitoring

Previous columns in this series have touched briefly on the subject of wastewater monitoring, analytical methods, waste discharge compliance, and the need for flow measurements (*PW* Sept./Oct. 1984, Mar./Apr. 1985, May/June 1985, July/Aug. 1985).

Monitoring of winery wastestreams is necessary for three discrete but related reasons:

–In order to demonstrate compliance with waste discharge requirements;

–To permit the winery to manage the wastewater system and to optimize its performance; and

–To establish a database to guide and reinforce future design decisions for equipment replacement and plant improvement or expansion.

At first glance, the third reason for monitoring might seem to be of least importance. On the contrary, my experience has shown that actual operating data for a reasonable period (as in increments of one wine-year from crush to crush) can permit a 'tighter' design for plant expansions or improvements precluding over- or under-designed system elements.

The relative tightness of a design refers to the engineer's degree of confidence in sizing piping and equipment components based upon best available information (engineer's own files and experience; published data; and educated guesses). To resort to an 'educated guess' is obviously the least desirable information base from which a designer can work, and he therefore must build in a large cushion of capacity, reliability, or safety factors to account for the high degree of uncertainty.

The economic implications of a good winery waste discharge database are obvious, and it is now only necessary for monitoring success to be sure that the winery is measuring the correct parameters. There is nothing more useless than gathering information just for the sake of information-gathering.

Is That My Job?

In small- to medium-sized wineries, the task of utilities maintenance and operation has generally fallen upon the already-burdened shoulders of the winemaker. Larger facilities can usually afford a full-time maintenance superintendent or engineer, freeing the winemaker for his primary duty of producing wine. The scale and complexity of water, wastewater, electrical, and refrigeration systems in large wineries demands the attention of an experienced and technically competent maintenance supervisor and staff.

Wastewater systems in wineries do not generally get the monitoring attention that they deserve because they are a *support component* in the production process, whereas loss of the refrigeration system, a *line component*, could create a major disaster. Somehow, the winery organization chart should include a 'box' for wastewater system monitoring and reporting.

What Should You Monitor?

For nearly all wineries, regardless of size, the wastestreams will be quite similar seasonally, and the waste characteristics will not vary widely from facility to facility. In California, even wineries that do not discharge their treated wastewater to surface water or groundwater must report monthly to the cognizant Regional Water Quality Control Board on the volume of wastewater produced, and provide the laboratory with results for a list of chemicals and biochemical parameters that were established when the winery received its waste discharge permit.

If process wastewater and winery sanitary waste are sewered

Don't Share Your Harvest, Protect it with BIRDNET from Conwed

• STRONG
• EFFECTIVE
• AND REUSABLE

Green Valley Farm
9345 ROSS STATION RD • SEBASTOPOL, CA • (707) 887-7496

NEW from DEMOISY...
NO MORE DOWNTIME
with self-cleaning stemmers
and clog-free piston pump!

NEW STEMMERS:
* Two of these new models come with a revolutionary, patented continuous rotating basket hole cleaner which eliminates build-up of leaves and stems, reducing downtime to a minimum! Both won the Coq d'Or grand prize at SITEVI at Montpellier in 1984!
* MODEL ET-20 with removable pump: Up to 20 tons/hr.
* MODEL ET-60 with fixed pump: Up to 60 tons/hr.
MODEL V-7 with fixed pump: Up to 6 tons/hr.
Note: Crushers are optional on these three models
STANDARD STEMMER/CRUSHERS: MODEL D-4, up to 10 tons/hr. and MODEL D-8, up to 20 tons/hr., both with removable pumps; and MODEL D-10, up to 30 tons/hr., with or without removable pump.

NEW PISTON PUMP:
This new pump is virtually clog-free because a rotor replaces old-style suction and discharge balls which fail to seat properly when leaves and stems are caught beneath, necessitating cleaning down time. Pump has slip clutch in case metal foreign objects fall into mechanism. No wonder this pump won Prize for ingenuity in the SITEVI vinification s

SEE THESE MODELS at INTERVITIS and ASEVI in May and June!

Call today for further information

PTI PROCESS ENGINEERING
(415) 782-5122
3329 Baumberg Avenue Hayward, CA 94545

and treated separately, then *each* system should have a record of performance based upon the following measurements:

	Where Measured		
	Raw Waste	Treated Waste	Storage Pond
Chemical Oxygen Demand/ Biochemical Oxygen	X	X	X
pH	X	O	O
Rate of Discharge and Total Volume	X	O	O
Suspended Solids	X	X	X
Settlable Solids	X	X	X
Total and Fecal Coliforms[b] + Fecal Streptcocci	O	X	X
Oil & Grease[b]	X	X	O
Nitrogen (ammonia, nitrate, + total)	X	O	O
Phosphorus (ortho & total)	X	O	O
Dissolved Oxygen	X	X	X
Color Turbidity	X	X	X
Residual Chlorine[b]	X	X	X
Total Sulfur (sulfite & total)	X	X	O
Chloride-ion[c]	O	O	X
Sodium-ion[c]	O	O	X

[a]*Waste Discharge Permits are required in California even if the winery is a zero discharger, but recycles the reclaimed wastewater.*

[b]*Not required for process wastewater in separated systems. Also, it is convenient and useful to have a water-quality profile on the winery's raw water supply. That doesn't need to be done with any great frequency because changes are usually slow to occur. Drought periods and very wet periods can often change groundwater chemistry. If you receive water from a municipal system, they can provide you with a periodic report on the chemistry of the supply.*

[c]*Only required if water is to be used for wine irrigation or blended with any other water for irrigation.*

What Do I Do with the Data?

The suggested list of parameters to be monitored may be modified by the winery once the range of values has been established and consistency in measurement demonstrated. While total elimination of the measurement of the particular constituent might not be wise, a reduced frequency of sampling and analysis will still yield time and labor/analytical cost savings without sacrificing the strength and reliability of your database.

Your laboratory personnel or an outside commercial laboratory, if your analytical work is done elsewhere, should provide you with a data sheet that lists all essential information, such as:

a) who sampled the wastestream, when, where, and how (a 24-hour composite sample, grab sample, etc.);

b) tabulated results showing appropriate units of measurement and mandated limits, if appropriate, from the winery's discharge permit.

c) remarks section, which should indicate if the results were unusual, outside of limits, or that the lab procedure was questionable.

These data should form the basis for the required monthly and/or quarterly reports to the local or state agency responsible for the surveillance of your wastewater system. If you do use a certified commercial laboratory, it sometimes keeps them on their toes if you give them a 'seeded sample' to see if they are alert and on top of quality control on the laboratory bench.

It is best protocol and fair to warn the laboratory that you might want to do something 'weird' to one of the samples sometime, just to run a check on their analytical accuracy. You can probably improve the performance of your own laboratory with seeded samples once in a while, again if it is done in a constructive way.

If you have access to a personal computer in the winery, it would also be easy to begin compiling data on floppy disks for later retrieval. With a little simple programming, you could also perform a trend analysis for selected parameters. Comparing the potable-water supply chemistry with the wastewater monitoring results for the same parameters would also suggest how much, if any, you are contributing in terms of sodium- or chloride-ion.

If you really want to immerse yourself in a number-crunching game, obtain a copy of EPA Technology Transfer Series, 'Monitoring Industrial Wastewater', August 1973. There are very complete narratives on sampling, analytical methods, flow measurements, and training of technicians. At the very least, file the data sheets chronologically, so that you have access to them when needed.

Motivation for Monitoring

Wineries are generally good at record keeping, and they must be, so that the U.S. Treasury Department does not find reasons for punishment and sanctions for misplacing 5,000 gallons of wine. Getting a good wastewater monitoring program underway may not be high on your priority list, but once implemented, could be as important as the database for your award-winning Sauvignon Blanc.

David Storm is a consulting sanitary engineer and owner of Winters Winery.

Genencor® enzymes

Clearly Better.

Call us. We'll tell you why.

GENENCOR

Genencor, Inc., 180 Kimball Way, South San Francisco, California 94080, (415) 588-3475

LIBRARY

GRAPEGROWING

Benefits of Cover Crops [M/A85]
Benefits of Leaf Removal, I [M/A86]
Benefits of Leaf Removal, II [M/J86]
Burgundian Viticulture:
- Climate [J/F85]*
- Methods, Part I [M/A86]
- Methods, Part II [J/A86]*
- Methods, Part III [J/F87]
- Soils [M/J85]
- Vine Varieties, Part I [S/O85]
- Vine Varieties, Part II [N/D85]

Canes or Cordons for Premium Grapes [S/O85]
Carneros District Expansion [M/A 86]
Close Vine Spacing, I: Pros & Cons [M/J86]
Close Vine Spacing, II: Sterling Vineyards [J/A86]*
Creating a Microclimate [M/J85]
Crop Prediction Techniques [J/A85]*
Determining Grape Maturity [J/A84]*
Determining Vine Nutrients [M/J85]
Drainage Improves Cakebread Vineyard [M/A83]
Drip Irrigation Guidelines for Vineyards [J/F87]
Grafting Techniques [M/A85]
High Yields = High Quality? [M/J86]
Managing Vidal Blanc Grapevines [S/O86]
Modified Trellising Improves Grape Quality [J/F87]
Night Hand Harvesting [M/J85]
Optimizing Vineyard Nitrogen Fertilization [J/F86]
Phosphorus Deficiency in Vineyards [M/J86]
Pierce's Disease in Sonoma County [S/O85]
Potassium Balance in Vines [J/F85]*
Pruning Safety [N/D85]
Seeding/Maintaining A Cover Crop [S/O85]
Sterling's Diamond Mountain Ranch [N/D85]
Successful Trellising at Callaway [M/A86]
Trials and Yields of Fenn Valley Vineyards [N/D86]
Carneros Expansion [M/A86]
Weed Control Simplified [S/O85]

WINEMAKING

Applications of Pectinases [M/J84]
Autolysis at Vichon Winery [J/A83]
Bentonite [M/J84]
Burgundian Vinification of Chardonnay [M/J84]
Chardonnay Techniques Surveyed [N/D86]
Commercial Sterilization of Wine Corks [M/A83]
Grape Flavor and Wine Quality [S/O85]
Coping with Stuck Fermentations [J/F84]
Describing Wine Structure Clearly [J/F86]
French Techniques of Cap Management [J/F84]
How to Order a Wine Tank [M/J85]
Inoculums for Malolactic Fermentation [M/A83]
J.Lohr Implements Reverse Osmosis [M/J86]
Juice Bentonite Fining [M/J85]
Life Among the Malolactics [M/J84]
Making Fermentation Decisions [J/A85]*
Malolactic Bacteria Technology [M/J84]
Méthode Champenoise:
- Cultivar Selections [J/A85]*
- Cuvée Filtration [M/J86]
- First Releases Evaluated [N/D86]
- Juice Treatments [N/D85]
- Malolactic Fermentation [J/F86]
- Pressurage [S/O85]
- Viticultural Considerations [M/J85]

Méthode Charentaise [S/O85]
Monitoring Sugar Per Berry [J/A84]*
Must/Wine pH = Quality [J/F84]
New Press Installations [J/F86]
New Techniques at Christian Brothers [M/J83]
Purchasing A Wine Press [M/A85]
Refrigeration: Ammonia or Freon? [M/A83]
Riesling: Grape Varieties and Wine Styles [J/A83]
Selecting A Pump: Designs & Options [M/J84]
Selecting Waste System Designers [J/A86]*
Sluggish and Stuck Fermentations [N/D83]*
Sources of Reinfection at Bottling [J/F84]
SO_2: Limits of Our Understanding [M/J84]
Sterile Bottling [N/D83]*
Sterile Filter Myths & Fables [M/J83]
Theories and Uses of Fining Agents [J/F83]*
Understanding, Controlling pH and TA [M/J83]
Whole Cluster Pressing of White Grapes [M/J83]
Winemakers' Database: Information Retrieval Simplified [N/D86]
Yeast Hulls [M/J85]

VARIETAL REPORTS

Chambourcin: Cedar Hill • Chaddsford • Hillcrest • Naylor • Presque Isle • St.Julian • Tewksbury • Truluck [J/A85]*
Chardonnay: Amity • Byrd • Cedar Hill • Domaine Laurier • Estrella River • Eyrie • Glenora • Gold Seal • Hargrave • Iron Horse • Markko • Meredyth • Parsons Creek • Preston • Sakonnet • Spring Mountain • Ste.Chapelle • Trefethen • Wagner • Herman J. Weimer • ZD [M/J83]
Chardonnay: Acacia • Chateau St.Jean • Grgich Hills • Kistler • La Crema Vinera • Charles Ortman • Sonoma Vineyards [M/J82]*
Chenin Blanc: Boeger • Callaway • Durney • HMR • Kenwood • Kiona • Charles Krug • McDowell Valley • J.Pedroncelli • Pine Ridge • San Pasqual [J/F83]*
Fruit Wine: Berrywine Plantations • Ellendale • Fenn Valley • Good Harbor • Honeywood • Kirkpatrick Cellars • Leelanau • Nashoba Valley • Oak Knoll • Paul Thomas • Summerhill [M/A83]
Gewurztraminer: Amity • Balverne • Columbia Evensen • Felton Empire • Gundlach Bundschu Grand Cru • Hacienda • Hinzerling • Monterey Vineyard • Louis M. Martini • Navarro • Joseph Phelps • Chateau St.Jean [J/A83]
Merlot: Clos du Val • Duckhorn • Knudsen Erath • Firestone • Gundlach Bundschu • Hargrave • Keenan • Louis M. Martini • Rutherford Hill • Chateau Ste. Michelle • Sterling • St. Francis [M/A83]
Muscat: Eyrie • Jekel • Pat Paulsen • R. Pecota • Quady • San Pasqual • Shenandoah [M/J86]
New Zealand: Cooks/McWilliams • Coopers Creek • Delegats • Matawhero • Morton • Nobilo • Temata [N/D86]
Pinot Blanc: Chalone • Congress Springs • Fetzer • Jekel • J.Lohr • Wente [S/O82]*
Pinot Noir: Amity • Columbia • Elk Cove • Eyrie Knudsen Erath • Oak Knoll • Ponzi [N/D82]*
Pinot Noir: Acacia • Beaulieu • Calera • Carneros Creek • Domaine Laurier • Frick • La Crema Vinera • Louis M. Martini • Santa Cruz Mtn. [N/D83]*
Riesling: Elk Cove • Firestone • Fenn Valley • Glenora • Gold Seal • Greenwood Ridge • Hillcrest • Hinzerling • Jekel • Preston • Smith-Madrone • Sakonnet [M/J84]
Sauvignon Blanc: Creston Manor • Inglenook • Martin Bros. • R. Mondavi • Silverado • Simi [M/J85]
Sauvignon Blanc: Callaway • J.Carey • Dry Creek • Montevina • Preston • J.Phelps • Sokol Blosser • Sterling • Stonegate • Ventana [J/A82]*
Sauvignon Blanc: Brander • Beringer • Cakebread • Hart • Husch • J. Lohr • Konocti • R. Pecota • San Pasqual • Shenandoah (CA) • R. Stemmler • Zaca Mesa [S/O83]*
Semillon: Ch.Ste.Michelle • Columbia • Congress Springs • Montevina • R. Pepi • Wente [J/F85]*
Seyval: Boordy • Cedar Hill • Fenn Valley • Glenora • Meredyth • Montbray • Mt.Pleasant • Naylor • Nissley • Rolling Vineyards • St.Julian • Wickham [J/A84]*
Shiraz-Syrah: Bonny Doon • Estrella River • Hardy's • Knight's • McDowell Valley • Orlando • Qupé • J. Phelps • Taltarni [S/O84]
Vidal: Stephen Bahn • Boordy • Chalet Debonné • Fenn Valley • Franklin Hill • Great Western • Hillebrand • Inniskillin • Mt.Pleasant • Reif • Sakonnet [S/O86]
Whole Berry Fermentation: Amity • Alexis Bailly • J. Lohr • R. Pecota [J/F84]

PURCHASING GUIDES

Barrels—Coopers and Brokers [M/J82]*
Computer Software [S/O86]
Corks [M/A82]*
Crushing and Destemming Equipment [J/F87]
Diatomaceous Earth [M/J83]
Fining Agents [N/D82]*
Plate & Frame Filter Media [M/J83]
Plate & Frame Filters [M/J83]
Pressure Leaf Filters [J/A83]
Secondary Closures [M/J85]
Stainless Steel Tank Doors [M/J86]
Steam and Pressure Cleaners [M/J86]
Steel Barrel Racks [M/A82]
Two-Way Mobile Radios [J/F86]
Wine Hose [J/A86]*
Wine Cases (Wood) [S/O85]
Yeast and Malolactic Starters [J/A85]*

MARKETING

John Ash's Approach to Wine with Food [J/A86]*
Fetzer Grows with Demand [J/F86]
Marketing Techniques at Balverne Vnyds [J/F87]
Parkway Grill's Successful Wine Program [J/F87]
Successful Wine Sales At Nepenthe [S/O86]
Restaurant's Success with N. Y. Wines [N/D85]
Selling Wine to Restaurants [J/A86]*
Single-Serving Bottles [J/A86]*
Two Faces of White Zinfandel [N/D85]
Sales Techniques at Wooden Angel [N/D86]

FINANCE

Economics of Producing Chardonnay [J/A84]*
Estate Planning [J/A85]*
Grape Cost Determination [J/A85]*
Making Credible Financial Forecasts [M/A86]
Sources of Finance [M/A85]
Strategic Business Plans, I [J/F86]
Strategic Business Plans, II [M/J86]
Strategic Business Plans, III [S/O86]
Wine Unit Costs: Whys, Whats, & Hows [M/J85]

For speed, convenience and easy reference . . .

Order your own copy of

PRACTICAL WINERY

- on time . . . every time directly from the printer
- in good condition with no clipped pages
- to keep for reference whenever you need it
- to read when it's convenient for you

If you've been reading someone else's copy, you may have missed some issues, or perhaps you've been receiving clipped pages. Or you have to go to someone else's files to find back issues.

Order your own copy and receive all the benefits of being a regular subscriber! Just mail one of the subscription forms with payment at the introductory price!

PRACTICAL WINERY 3-Ring Binders are available to protect your issues in storage when you need to find a back issue. $5.00 each + $2.00 handling

ORDER FROM THE LIBRARY Add missing copies to your collection at $5.00 each (pre-paid).

The date in parenthesis after each story indicates the issue in which the story was originally published.

Stories with asterisks after the date are only available as story reprints (photocopy) @ $1.50 each (pre-paid).

SUBSCRIBE NOW and expect each issue to provide the hands-on, in-depth, useful information for you to grow better grapes, make better wine, and sell more!

The Wine Retailer

Stan Hock

Label Wars

Remember the good old days, when all a winery proprietor had to do was put a good wine in the bottle? In that innocent era, you bottled your wine, aged it a bit and then sent it off to market, knowing the rest would pretty much take care of itself.

These days, it sometimes seems as if a wine's quality is but a secondary factor in the equation determining its commercial destiny. We have galloped headlong into an era of high-tech merchandising where buzz phrases like 'marketing strategies', 'support services', and 'graphic communications' mingle in the air with the odor of fermenting grape juice and the scent of new oak barrels. In this brave new wine world, the graphic designer is every bit as important as the reliable cellar rat, and you enter the fray without a barrage of P.R. at your own peril.

How did this state of affairs materialize? What happened to the farmer in coveralls, the country gentleman with a Jeffersonian gleam in his eye, the hardworking family who wouldn't know a press kit from an insurance policy?

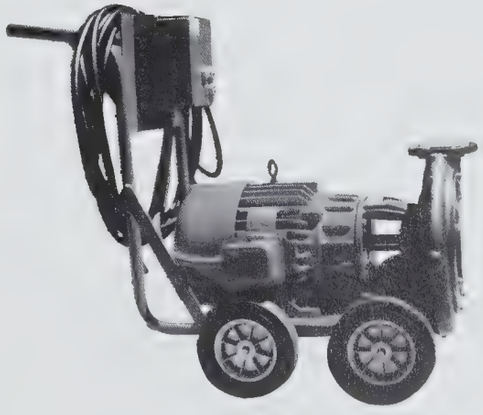
What happened was the wine boom of the 1970s, which encouraged every burnt-out, wine-loving captain of industry, every fanatical basement oenologue, to migrate to wineland in search of fame and—maybe—fortune. A few hundred wineries became—presto!—four, five, six hundred wineries, and the battle for shelf space was on. When the boom went bust in the early 1980s, with M.A.D.D. ushering in a new epoch of prohibitionist stricture and we babyboomers investing all our wine money in houses and babies, the competition became almost pathological. Three puffs, four gold medals, a 94 from Parker—you employ your full arsenal, whatever weapons are at your disposal.

But that's not all. Wineries must find a way to effectively beam their images, their personalities, out into a vast and congested marketplace. In lieu of mass-media advertising, which only the giants of the industry can afford, a visually-striking, arresting label becomes a not-so-secret weapon, a winery's first-strike capability, a magnet to connect the producer with the civilian/consumer who wanders through the wine wars perpetually dazed by the sheer number of combatants.

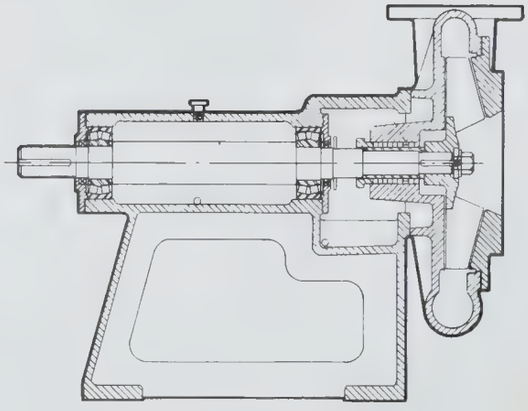
Everybody's Doing It

Consider how many California wineries, large and small, have redesigned their labels in the past few years. A very partial list includes Alexander Valley, Burgess, Carneros Creek, David Bruce, Davis Bynum, Dehlinger, Domaine San Martin, Dry Creek, Franciscan, Geyser Peak, Inglenook, J.W. Morris, Keenan, Landmark, Madrona, Mirassou, Monticello, Pedroncelli, Sebastiani, Simi, and Smothers.

Add to these a host of attention-grabbing new entries from De Moor, Ehlers Lane, Hanna, Lyeth, Sky, and Ultravino, and an ever-burgeoning array of special bottlings (Ravenswood Zinfandels in etched bottles, Kenwood's Artist Series Cabernet



Cart Mounted Transfer Pump



Stationary Mounted MUST Pump

Krogh Wine Transfer and Solids Handling Pumps are specially modified versions of standard Series 1000 heavy duty pumps. The basic 1000 design incorporates decades of experience by the Krogh organization designing and manufacturing heavy duty centrifugal pumps for "tough service."

The close-coupled version of the Wine Transfer Pump, shown above left, is designated the Model 1050. Hundreds of these units are in service throughout the wine industry. The stationary MUST Pump, shown above right, was specifically developed for difficult, solids handling applications. It is currently being used successfully by numerous wineries.

KROGH
Pump Company

515 HARRISON STREET
SAN FRANCISCO, CA 94105
(415) 986-2100
TOLL FREE 800-225-7644

Sauvignons, Opus One, etc.) and you have a virtual floating museum of commercial wine art and a powerful testament to the influence of new-age wine merchandising. An executive at a prominent design/public relations firm estimates that in the two-year period 1986–87, at least 100 new labels, both original and remade, will grace the wine market, and it's a trend not likely to subside soon.

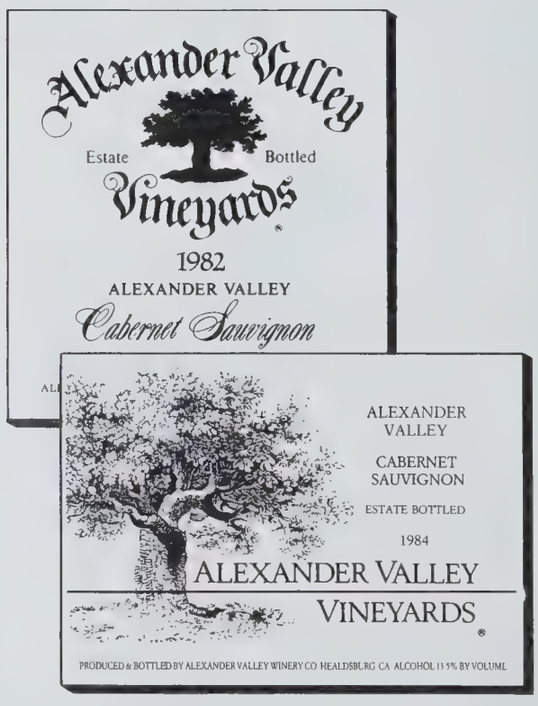
Evoking the Response to Buy

What does a winery expect to gain by subjecting its product and its image to a radical facelift? The bottom line, not surprisingly, is sales. As one well-known San Francisco designer intoned to me (I wasn't sure if this was serious; everything he said sounded as if it came from a 'Manual of Modern Advertising Principles'), "Consumer product packaging works best when the graphic communication travels a path from eye to head to heart, evoking a response to buy." And, "If packaging enhances a pleasurable wine experience, then you have a repeat customer."

Michelle Hunter of CF&H Communications Group, a public-relations company affiliated with Colonna, Farrell: Design Associates (a firm which produces more wine labels than any other in California), was less epigrammatic in explaining why wineries are rushing to spruce up their packaging. "Big wineries want to reflect the position in the marketplace which they occupy, or hope to occupy," she told me. "They come to the designer with a clear idea and they think in terms of five- to ten-year programs.

"On the other hand, the proprietor of a small winery may be motivated by seeing a friendly competitor get a new label, or by a feeling that, since he's expanding his production and moving out into the market a little more, it's time for a facelift." In the latter case, the winery owner usually approaches the designer with a half-dozen labels he or she admires, with a vague notion of commissioning something similar. This leaves the designer with the primary responsibility for conceiving the new label. With a winery owned by a corporation, the concepts are initiated in-house and the designer becomes their executor.

Whether a winery's label depicts its facility, vineyards, owner's profile (or taste in art) or some abstract notion of style, it is important that the label reflect the personality of the corporation or individual involved, according to Hunter. In many cases, a new label also expresses a winery's conviction that it is moving in a new direction.

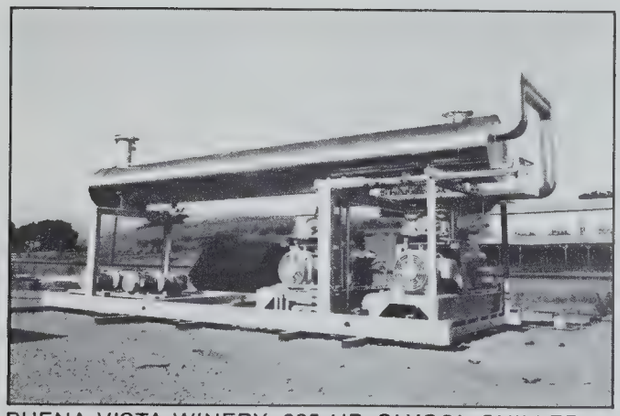


Dan Wildermuth, marketing director at Mirassou, says that his winery's elegant new label, featuring the Mirassou name in calligraphic script (framed with a gold band and embellished with a red accent over the 'i') is "a result of improvements in the wines. We upgraded the quality of the wines, so we felt we should upgrade the quality of the package."

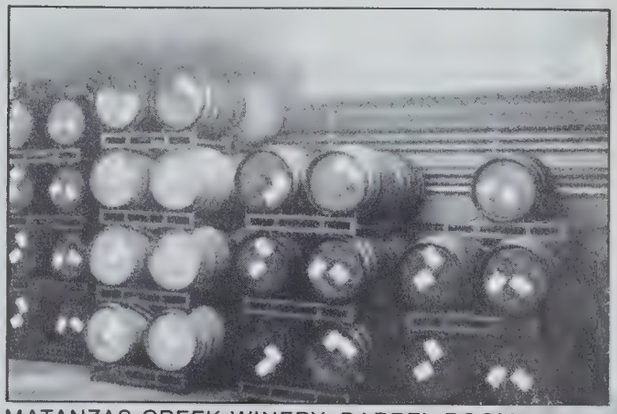
The winery was also intent on honing its primary weapon in the skirmish for shelf space. "We wanted to achieve a greater impact through the label," Wildermuth admits. "The new label is not a radical departure, but it greatly enhances buyer acceptance." Adds Dwight Pate of Pate International/The Studio in San Francisco, whose wife, Susan Roach Pate, designed the new Mirassou label (she also designed the Opus One label,

WHAT DO THESE AWARD-WINNING WINERIES HAVE IN COMMON?

They know the value of a service oriented refrigeration company. We are proud that many fine wineries have chosen **Refrigeration Technology, Inc.** to provide their refrigeration needs. Our customers, like fine wine, receive the best we have to offer.



BUENA VISTA WINERY, 225 HP GLYCOL CHILLER



MATANZAS CREEK WINERY, BARREL ROOM

REFRIGERATION TECHNOLOGY, INC.

DESIGN · INSTALLATION · S
5130 BLANK ROAD, SEBASTOPOL
(707) 823-3222

among others), "What we did, basically, was to turn the lights on."

Katy Wetzel-Murphy of Alexander Valley Vineyards in Sonoma, a winery one-tenth the size of Mirassou, says her family also was interested in reflecting changes when they embarked on an effort to 'clean up' their old label.

"The old one was fine for 20,000 cases, but not for 40,000–50,000, which is the direction we're moving," explains Wetzel-Murphy. "The old label had four different typefaces, and our logo looked like a cross between a grapevine and a mud puddle. The new label is much more striking. All of the people who sell our wine have had a positive reaction."

Wetzel-Murphy emphasizes that the new Alexander Valley label still reflects the basic personality of the winery and its wines. "We kept it straightforward, not fancier than we are, and in accordance with our pricing policies." The addition of a back label containing a universal price code was an acknowledgement, says Wetzel-Murphy, that increased production necessitates "looking at non-traditional areas for growth," including chain outlets, state stores, and sales to Canada.

Inspiration from the Fashion World

Wine label designers draw their creative inspiration from a variety of sources, but an important one is the world of fashion. When I asked Channing Rudd, a veteran graphic designer who also owns his own winery in Lake County, where he gets ideas for new labels, he replied, "The cosmetics counter at Macy's." Rudd clarified this by pointing out that "the merchandising of wine increasingly is shifting to food outlets, where women are the primary shoppers, so wine labels are being designed more and more to appeal to a female audience." Hunter agrees. "Women buy 60% of the wine in this country, so, increasingly, wine and perfume have a similar clientele."

A good, if somewhat tasteless, example of this effort to appeal to female consumers was provided recently by a press release accompanying the debut of a new label from De Moor Winery in Napa (formerly Napa Cellars). Entitled 'New De Moor Label Designed to Pick up Women', this rather lengthy piece described in great detail how each component of the De Moor label was designed to gratify some facet of the female sensibility. One wonders whether the winery will next hire an

oenological consulting team to advise on the exact levels of tannin, alcohol, wood, and acid which the average woman deems pleasing.

Brave New Wine Labels

Many wineries today invest a great amount of time, energy and money in the creation of a new wine label (up to 18 months and $100,000, according to the designers I canvassed). This would be senseless were it not for the fact that new design and printing techniques enable graphic artists to craft labels so compelling, they may indeed alter or secure a winery's fortunes.

Where wineries once regarded their labels simply as a means of identifying themselves and their wines, they now depend upon them to make a statement, to convey directly to the consumer, via graphic depictions, the fundamental sensibility (true or false) of the winery and its wines. This is only possible because of the vast array of design options now available to the graphic artist and printer, options that have pushed wine packaging into the modern world of product advertising, into the realm of commodity-as-art-form.

"There have been three major trends in the last thirty years," says Rudd, who for eight years was the art director of Browne Vintners, a division of the Seagram Company. "In the 1950s and 1960s, you had colorful, hokey labels that were very European–particularly German–in style. Then, in the early 1970s, Paul Masson and Charles Krug pioneered a simpler, more elegant label–clean, straightforward script on a white background. Now we're seeing a reversal of that trend, a move to four colors, and an array of expensive procedures like embossing, foiling, hotstamping, and silkscreening."

CFS's Hunter elaborates. "We're creating new paper stocks, with new colors and textures. There's laser-cutting (as opposed to traditional die-cutting) of labels; embossing with tint foils, engraving, unique bottle shapes like Chateau Bouchaine's; limited-edition bottlings that have 10–15 colors to the label; art-oriented (painting) labels. The industry's just getting more and more sophisticated."

Needless to say, we have not seen the end of this artistic ferment. In the course of my inquiries, I learned of laser graphics and heard speculation about the use of holograms. In fact, if the revolution in wine packaging aesthetics continues unabated, it may solve a perpetual dilemma plaguing virtually all wine aficionados: finding adequate space to store all the wines one elects to buy and cellar.

Hell, maybe we can start hanging them on the walls.

COMPUTER SYSTEMS TO HELP YOU PRODUCE QUALITY WINE AT MANAGEABLE COST

NOW WITH TWO INTEGRATED IBM PC SYSTEMS

WINERY INFORMATION MANAGEMENT SYSTEM
Case Goods Inventory, Order Entry and Invoicing, Sales Analysis, Payables, Receivables, and General Ledger.

WINERY PRODUCTION MANAGEMENT SYSTEM
Crush, Blend, Percent Composition and History, Tank Ingredients, Wine Chemistry, Barrel, Cost Analysis, Grower Contracts, and Government Forms.

DATA CONSULTING ASSOCIATES
18000 COLEMAN VALLEY ROAD, OCCIDENTAL, CA 95465
707-874-3067

Attitude is Key to Wine Sales

Joe Tarantino

Leonard Cohen, manager of the Olde Port Inn, Avila Beach, CA, is critical of those who think that spending bundles of money is the only way to create a respectable wine list. "What the Grand Awards [a program sponsored by *The Wine Spectator* to recognize outstanding wine lists] tell the restaurateur is, "You can't have a good list without a lot of money."

Risky Business

In 1981, Cohen didn't have a lot of money, or a lot of knowledge, but he did have bountiful enthusiasm. He hired a local wine distributor to help formulate a wine list. The two agreed to an unusual wager with owner Barry Cohen, Leonard's father. "He told us if we didn't sell the wine, we'd be paid in wine," recalls Leonard.

Wine was a risk that paid off for Olde Port. Monthly inventory tripled to over $3,000 as wine sales increased. Inventory now hovers around $15,000. Annual wine sales account for about 15% of gross. Though lunch is served, most of the business in both food and wine is in the evening. According to Cohen, the average bottle sale is $10–$11 and, on average (based on total head count divided by wine sales), each person spends $2.10 on wine.

Today, Olde Port has a compact wine list chock-full of prominent California wineries. Since listed producers are generally consistent in quality and style, wine choices are not vintage-dated. "I've never had a complaint about no choice of vintage dates," says Cohen. "People who know wine will ask and, in fact, we keep two or three back vintages of certain wines on hand. I'm a firm believer in having what you say you have on the list. After about 40 selections, keeping a list current is a full-time job, and a wine list shouldn't be a burden.

Red Wine Sells, Too

"Our 150 selections, listed under 15 varietal categories, is adequate. That is the optimum, in my opinion. People won't get lost." While Olde Port specializes in seafood, a popular match for white wines, the restaurant keeps 30% of its inventory in red wines and has initiated a modestly successful program which pairs reds with menu items; these are listed on a chalkboard with daily fresh fish and wine specials.

Olde Port, founded in 1970 by Barry Cohen, is operated in conjunction with a wholesale fish business, founded in 1967, also by Cohen. A good portion of the daily catch goes to the

Decanter U.S.A.

THE UN-BOTTLING LINE

Decanter U.S.A., Inc. introduces an economical solution for reprocessing case goods:

The first portable automated line for wine reclamation.

120 Daffodil Drive, Hollister, CA 95023 (408) 637-9758

restaurant. While the menu is weighted heavily towards sautéed or broiled local and eastern seafood, priced from $10–$16 per complete dinner (including bread; choice of soup or spinach salad; choice of brown and wild rice pilaf, baked potato, or vegetable), some meat dishes (teriyaki chicken, $9.95; top sirloin, $10.95; filet mignon, $15.25) provide for those wishing an alternative to fish and an occasion for red wine.

One prix-fixe dinner ($17.75) has featured cioppino with one 6-oz glass of 1982 ZD Napa Valley Pinot Noir. A second glass costs an additional $3.75. Two dessert specials have included fresh peach cobbler paired with a 2-oz serving of Chateau St. Jean late harvest Sauvignon Blanc ($5), and chocolate torte with a 2-oz serving of Rombauer 1981 Cabernet Sauvignon ($5).

Wine/food pairings, which will be expanded in 1987, come from catering, which Olde Port does on a limited basis. For example, Cohen discovered Sanford Sauvignon Blanc a good match with oysters Rockfeller (a $7.50 appetizer), and he will offer that combination as an appetizer special in the future.

Olde Port's wine-by-the-glass program is the strongest sales point for reds, according to Cohen. Table tents advertise four selections between $2.50 and $3.75/6.5-oz pour. The list changes every two months and includes a white Zinfandel, a Pinot Noir or other red, a Chardonnay, and a Chenin Blanc.

Table tents are reinforced by the hostess, who, after seating patrons, presents the wine list, announces entrée specials, and repeats, while pointing to the tent, the wine-by-the-glass selections. If the hostess has a personal favorite, she will share that choice with patrons.

"It's easier to sell red wine by the glass than by the bottle," says Cohen. "This is especially true when you have a couple and the lady orders sole while the gentleman chooses steak." Reds have a lot of catching up to do. Red wine by-the-glass and bottle sales combined average only 4% of total wine sales, which average $7,000 monthly.

Personal Touch Is Key

At Olde Port, low turnover enables employees to contribute to building the wine list. Weekly tastings are held with the six waitpersons. The recently-updated wine list was chosen on the basis of employee preferences. Cohen also takes his employees to wineries and encourages winemakers from around the state to visit and lecture.

"Our waiters ask questions in order to draw out the customer's preferences," says Cohen. "They'll ask, 'Are you interested in wine tonight?' and can say, "I helped write the list; may I recommend something?" We strive to knock down snob-appeal barriers. If you don't like what we recommend, we'll drink it." As a hedge, waiters generally recommend wines that have proved successful with other customers. One popular pair is blackened redfish ($12.50) with Saucelito Canyon white Zinfandel ($8). "The Saucelito white Zinfandel isn't real sweet," notes Cohen. "It's a lighter style, perhaps slightly herbal, with a hint of tannin. That firmness complements the peppery (red, black, white and cayenne) and herbal (oregano and thyme) qualities of the blackened redfish."

Success at Olde Port is based less on procedure and more on attitude. "We make people feel comfortable," says Cohen. "We treat a hard-to-find wine the same as we treat one you can buy in the grocery store."

The wine list features 55 California wineries including numerous small California producers (Hanzell, Long, Chalone, Duckhorn). Price examples are: Opus One, $60; Jordan Cabernet Sauvignon, $20; Long Vineyards Chardonnay, $24; Chateau Montelena Napa Chardonnay, $17; Matanzas Creek Sonoma Chardonnay, $17; Grgich Hills Johannisberg Riesling, $10; Acacia Pinot Noir, $18; and Duckhorn Merlot, $18.

The pricing formula is unique. Lower-cost wines, such as white Zinfandel, Chenin Blanc, and Riesling are marked up 2.5 times wholesale. Higher-cost wines, such as Cabernet Sauvignon, Pinot Noir, and Chardonnay, are priced from suggested retail to $3 over retail. "We try to encourage people to drink the best–but not necessarily expensive–wines," says Cohen. "We could price higher and get away with it, but our pricing is a drawing card."

Another drawing card is the absence of a corkage fee. Cohen estimates that patrons bring their own bottle of wine perhaps 10 times/month. "Most wines are brought in for a special occasion–why penalize it?" he says. "In fact, most of the time, they share it with us."

A simple house wine provides leverage to promote premium wines, according to Cohen. For 18 years, Olde Port has served Almaden red, white, and rosé as 'house wine'. Currently, charges are $1.75 per 6.5-oz pour, $4.25 per ½ liter, and $6.50 per liter.

Olde Port sells seven cases/month of white Zinfandel (all three list selections are $8/bottle), but sells even more (nine cases/month) Chateau Montelena Chardonnay at $17/bottle and Edna Valley Vineyards Chardonnay at $16/bottle. The reason? "The waitstaff recommends those two most often and the quality justifies the price." They don't, however, push the rare labels. "We won't recommend Long, Hanzell, Heitz or any other specially-styled wine unless we know the person wants it," says Cohen. "That is determined by our waitstaff, who talk to customers about previous Chardonnays they have tried. If they are familiar with Hanzell or other high-quality Chardonnays, then it is recommended. I would not want to sell Hanzell if the customer would not appreciate it; it's not in abundant supply.

"We won't hesitate to disagree with a customer's choice, however, no matter what the wine. Once a lady ordered 1983 Mayacamas Chardonnay ($20) with her order of prawns ($15.75). I countered by offering the Byron 1984 Central Coast Chardonnay ($14). I felt the Byron was drinking better at the time, but I promised to bring her the Mayacamas if she didn't like my choice. She loved it."

Cohen's only sales incentive program, from 1981 through 1983, was a monthly selling contest. The employee who did the greatest volume in 30 days won a case of wine. Second place received half a case. But Cohen decided the best incentive comes from within each waitstaff person after training. "If they work hard, they make customers happy and generate a bigger tab and a larger tip," concludes Cohen.

WYATT
IRRIGATION SUPPLY INC.
Sprinkler Systems
Drip Irrigation
Green House Sprinklers
Drainage Systems
Filter Devices
AGRICULTURAL
DESIGN • SALES • SERVICE
707/578-3747
468 Yolanda Ave., #15 • Santa Rosa, CA 95404

The Noble Riesling in Germany

Eleanor and Ray Heald

The German wine market as a whole is suffering confusion in this decade due principally to three factors: 1) drastic crop fluctuations from year to year; 2) strength of the Deutschemark, particularly against the U.S. dollar; and 3) absence of legislation regulating crop size (tons/acre).

Top German estates with a developed 'brand identity', principally in the U.S., suffer least from factors 1 and 3. Factor 2 affects the entire German wine industry. The price of German wines from the 1985 vintage is up a minimum of 30% over the 1983 bottlings—a vintage considered on a quality par with 1985.

To bring stability to German wine sales, producers and exporters of these wines are using the following strategy. Light wines never caught on in the U.S. due to their lack of complexity. German wines are being promoted as the naturally light wines with low alcohol—less than 10%—to fit the lifestyle and lighter food habits of the weight-conscious wine consumer. Americans are learning something about German wines that have made them popular in their own country for centuries!

Americans appear willing to pay top dollar for lighter and healthier wines. Many top German estates, particularly in the Mosel-Saar-Ruwer, sold out of 1985 wines by summer 1986, proving, perhaps, the Robert Mondavi theory that "there will always be a shortage of the world's great wines."

Riesling is king in German wine production because it can withstand sudden, severe winter freezes that can drive temperatures below −13°F for sustained periods. If the calendar date of flowering were a substantial criterion for determining harvest and vintage potential, many years would be declared a disaster in the second week of July, when many regions have not yet completed flowering.

Even if the weather continues cool and/or rainy into August, German vintners don't despair. At this point, if the sun shines and it is warm and dry until the end of October, as was the case in 1985, the mainstays—QbA, Kabinett, and Spatlese qualities—will be produced in sufficient quantity to declare the year successful.

The German wine law of 1971 set quality grade standards based on natural sugar levels in the must, called 'must weight'. Within the law, there are two categories: Qualitatswein bestimmter Anbaugebiete (QbA) and Qualitatswein mit Pradikat (QmP). Pradikat wines are further subdivided into Kabinett, Spatlese, Aulese, et. al., in increasing must weights. Kabinett, the driest of the QmP wines, is the basis for discussion here.

Authors' notes: In the discussion of vinification techniques that follows, the term Sussreserv is frequently used. Sussreserv is fined and filtered must stored under CO_2 to prevent fermentation. Irrigation techniques do not enter into the discussion since irrigation is illegal in Germany.

BURGERMEISTER ANTON BALBACH

Niersteiner Klostergarten

PW: Describe your style:

Friedel Bohn: The Nierstein style comes from the soil and Rhein River-influenced climate. These Riesling wines have a balanced elegance and fruitiness, but a forward, vigorous ripeness that is unmistakable. Flowery perfume dominates the aroma of these wines in their youth. After 1–2 years, the bouquet is fully harmonized with palate fruitiness and good fruit acidity. They can age from 8–10 years. Nierstein Rieslings are excellent with game dishes without heavy sauces and dry ones are perfect with seafood.

PW: Describe the vineyards:

In 1966, we planted Geisenheim Riesling clone 198 with SO4 rootstock, 650 vines/acre, spaced 5x3 on a plateau facing the Rhein River with an east-southeast exposure. The vines are kept erect with the aid of 4–6 wires, equally spaced vertically, with the top wire reaching a height of 5.2–6.0 feet. The vineyard is pruned to 10–12 buds/vine, to give an average yield of 2.5–3.0 tons/acre.

The soil is sandy clay with clay subsoil. Annual soil analyses are done to determine deficiencies, if any, in sodium, potassium, and magnesium. Fertilizing as needed is done after harvest and in spring. The first pre-bloom spray is applied June 10–15 for peronospora and oidium. A second application is made post-bloom. First through fourth cover sprays are for botrytis and oidium.

After flowering, 90 days are required to ripen Riesling in this region. Annual rainfall is 24 inches with 6 inches during the growing season. Winter temperatures average 50°F, but there are occasional frosts in both February and May. Summer highs can reach 95°F for up to a 4-week period and vines can suffer from lack of water.

PW: When are the grapes picked?

We pick from October into November and use 20° Brix and 0.80 g/100mL TA as parameters along with my taste experience, which can distinguish the difference between sour rot and beneficial botrytis infections.

PW: How is the wine made?

Hand-picked grapes are crushed without SO_2 addition, but with 250 g/L bentonite adjunct and pressed to yield 180 gallons/ton average.

Juice is settled for two hours, then centrifuged off the juice lees to 5% solids and fermented on natural yeast for a period of 10–14 days at ambient cellar temperature. First racking off the yeast lees follows, and filtration is done in late November when an SO_2 addition of 80 ppm is made. The wine is generally clear, but is held for 3–4 months, during which cold stabilization takes place at 43°F.

Before bottling, the wine is sterile-pad-filtered and some portions are back-blended with Sussreserv to 1.8 g/100mL r.s. The wines are bottle-aged 1–2 months before release.

Authors' note: The following two estate wines are vinified under the same winemaker direction at Franz Reh & Sohn winery, owner of both properties. Some techniques overlap, and in the interest of brevity, restatements have not been made.

JOSEFINENGRUND
Trittenheimer Apotheke

PW: Describe your style:

Reiner Meuren: Young wines from this estate are fresh and fruity, but they have not yet achieved absolute harmony between residual sugar and acidity. Our vinification goals are to achieve harmony between acid and sweetness after five years of bottle ageing. Then, the wine has fully developed bouquet with rich body and flavor components to accompany light meats and vegetarian meals.

PW: Describe the vineyards:

Riesling clone 198 on 5C rootstock was planted in 1970, about 1,040 vines/acre, spaced 5x3.5 feet on southeast- to south-facing 10° slopes between 427 and 623 feet elevation.

Training and trellising is called Halbbogen (half-bow). The vine is single-cane-pruned. Each cane is arched and tied to a wire 28 inches aboveground. A second wire at 44 inches supports the cane at the top of the arch. Additional pairs of moveable wires at 54 inches and 74 inches support shoot growth.

This system gives the best possible condition of light to the leaves, and the work of tying-up becomes relatively easy and can be done quickly. In addition, more rows of vines are possible in richer soil conditions. We prune to an average 23 buds/vine, to yield 4.5–5 tons/acre.

Sandy loam soil with pH around 6.7 has a 12-inch topsoil and sandy loam subsoil. In late April, a nutrient fertilizing program is done in a 53:106:13 ratio of nitrogen/potassium/magnesium expressed as lbs/acre. Organic fertilizing is done during the winter. Pre-bloom and post-bloom sprays for peronospora and oidium are made. About every 14 days, from mid-June until mid-August, applications are made to prevent peronospora, oidium, and botrytis.

Riesling needs a minimum of 1,522 hours of sunshine after flowering to ripen. This vineyard gets an average of 1,605 hours. Annual rainfall is 27 inches with 16 inches during the growing season. Winter lows of −4° to +5°F occur during some winters for 2–3 days.

Riesling normally does not suffer from these cold temperatures. Frost damage can occur in January and February and we occasionally have late frosts in mid-May. Bud break is at the beginning of May, berry set at the end of June and veraison by the end of August.

PW: When are the grapes picked?

We look for healthy grape conditions and moderate acidity levels (0.75 g/100mL) to begin picking about October 10 and extending through November 5. Average sugar level is 18° Brix with a pH around 3.3.

PW: How is the wine made?

Hand-picked grapes are crushed and pressed immediately, yielding 140 gal/ton. The juice is settled overnight and centrifuged to 1% solids off the juice lees. Inoculation with *Saccharomyces cerevisiae* follows.

Fermentation lasts 1–2 weeks in 40- to 50-year-old wooden casks ranging from 1,000–3,000L in size at ambient cellar temperature. First racking off the yeast lees is done before Christmas. A second and final racking is done in February after fining with bentonite at an addition rate of 1.0–1.5 g/L. A filtration using tight pads or diatomaceous earth follows.

Wooden casks are topped 4–5 times during the 6–7 months' storage and free SO_2 levels are maintained between 25 and 35 ppm.

If Sussreserv is used, the reserve is added to the finished wine shortly before bottling. This addition is kept from refermenting by cold, sterile bottling with a 0.65μ membrane cartridge in line. The wine is bottle-aged 2–3 months prior to release.

MARIENHOF
Piesporter Goldtropfchen

PW: Describe your style:

Reiner Meuren: Our aim with this wine is similar to that of

the Josefinengrund Estate, but the vineyard location dictates a lighter, somewhat subtler style that has made many Piesporter Goldtropfchen wines very popular in the United States.

PW: Describe the vineyards:

In 1960, Riesling clone 232 was planted with 5C rootstock spaced 3.5x3 on south-facing 20–40° slopes, averaging 1,760 vines/acre between 394 and 525 feet elevation. Training and trellising is the same as Josefinengrund except that yield on this estate is 3.5–4.0 tons/acre.

The soil is gray slate with a pH of 6.5 and 12-inch topsoil. Subsoil is also essentially gray slate. About 27 inches of rainfall is normal, with 16 inches during the growing season. Remaining viticulture is similar to Josefinengrund.

PW: When are the grapes picked?

Same criteria as Josefinengrund.

PW: How is the wine made?

Identical to Josefinengrund. It now serves the reader's purpose to check the tasting notes for both wines. They are not critiqued the same, and each shows an individual style.

WEINGUT EGON MULLER
Scharzhofberg

PW: Describe your style:

Egon Muller: Our newly-released Mosel Kabinetts are fruity and delicate with racy acidity [term used to describe higher acid balances of German wines] equalized by a measured and flowery bouquet showing the perfect combination of characters derived from the Riesling grape and the slate soil. These are Riesling's best characteristics: subtlety of flavors, low alcohol, a fruity and refreshing taste, and great ageing potential. A wine in this style matches all kinds of light food, especially seafood, without overpowering flavor.

You can expect a Riesling Kabinett from a better-than-average year to last up to 20 years. During that period, it will develop a very distinctive mature Riesling bouquet with acid and sweetness harmonized into a perfectly-pitched unity.

PW: Describe the vineyards:

About 60% of the vines were planted between 1900 and 1910 on their own roots. The remainder was planted after World War II, principally on 26G rootstock. We are not allowed, by German law, to plant self-rooted vines today, but we try to conserve the old vineyards as long as possible. There are different blocks, averaging 1,800 vines/acre, at an elevation of 656–820 feet, spaced 3.6–5.5x4.0–4.5, on steep, 30–45° south-facing slopes in a narrow side-valley of the Saar River.

Vines are trained one stake/vine, where shoots are tied to the stake. Newer plantings are on a trellis with 7 wires spaced 8 inches apart; the lowest wire is 8 inches aboveground. The traditional system gives best possible sun exposure and potential use of a caterpillar.

It is essential that there is no canopy. The shoots are attached to the stakes or to the trellis for maximum sun exposure. Grapes should not be covered by leaves, but the leaf area needs to be as great as possible for potential ripening of fruit. The vines are pruned to 12–16 buds/vine to produce 1–2 bunches/bud, for an average annual yield of slightly less than 4 tons/acre.

The soil is slate and slate-decomposed soil with high organic matter content, 3–7 feet of light topsoil and a pH of 6.5. This particular soil composition warms up quickly and holds the heat well during the night. The subsoil is a mixture of stone and slate.

Fertilizing with manure at 30 tons/acre is a regular practice during winter in alternate years. Spraying, at 4- to 8-inch shoot growth, begins at the end of May for downy and powdery mildew. The same sprays are done pre-bloom in mid-June and post-bloom at the end of June. First cover application begins in mid-July and is done monthly until the end of August. Special botrytis protection is included in the final or the last two cover applications.

Annual rainfall is approximately 24 inches. Frosts can occur in mid-May. Bud break is mid- to late April, berry set in mid-July and veraison by the end of August.

PW: When are the grapes picked?

We begin picking at the end of October and often extend until November 10–20. We want grapes in the 17–24° Brix range with TA 0.85–1.2 g/100mL and pH around 2.8. Harvest is frequently regulated by weather conditions.

PW: How is the wine made?

Hand-picked grapes are crushed, then pressed with 100% stems as press aid. Yield is about 165 gal/ton. The juice is centrifuged according to the desired clarity of the must, which is judged by sight. If acid levels are too high, *i.e.*, greater than 1.2 g/100mL TA, must acid is adjusted to 1.0 g/100mL by addition of $CaCO_3$. Bentonite is added to the must after pressing. It stays in the cast during fermentation and is removed at first racking.

Natural yeast ferments the must in 1,000L wooden casks in 3–21 days, depending on ambient cellar temperature, which can be as low as 41–50°F. When the desired residual sugar is attained, the wine is sterile-filtered. First racking is done 1–2 months after completion of fermentation and may be done twice more if necessary.

The wine is aged in neutral, 1,000L oak casks, some as old as

50 years, that are topped weekly for a period of 6 months. During this time, we keep free SO_2 levels about 50 ppm. For heat stability, we usually add 150 g/100L bentonite (although the bentonite added before fermentation usually makes a special heat stability treatment superfluous) followed by coarse- to medium-pad filtration. The wine is sterile-bottled and held two weeks before release.

C. VON SCHUBERT'SCHEN GUTSVERWALTUNG GRUNHAUS
Maximin Grunhauser Abtsberg

PW: Describe your style:

Carl von Schubert: Most important is a fresh, fruity acidity which gives our wine a lively character. Our wines need a long time after bottling to develop and open up. They should be light and delicate in their youth, finishing crisp on the palate, with some CO_2 spritz and a slight apple tone in the finish.

Seafood and all sorts of fish with a creamy sauce based on white wine, asparagus, veal, rabbit, fresh fruit, and melon with parma ham will complement our wine.

At their optimum maturity, the best vintages have a full, honeyed nose and tropical flower aroma. On the palate, they have an oily richness, great depth, and lots of ripe fruit, but retain a youthful racy character for 10–15 years.

PW: Describe the vineyards:

In 1970, 2,280 vines/acre, spaced 5.25x4.1, of Riesling clone TR356 were planted with 26G rootstock, which is *Vitis vinifera Trollinger* x *Vitis riparia*. The site is a unique hill at 20–80% grade, divided into three sites facing southeast to southwest along a side valley from the Ruwer Valley, at an elevation of 492–820 feet.

Riesling in this region is always cane-pruned to 20 buds/vine. The vine is trained on a trellis with 2 fruiting wires, 1 cane wire and 2–3 foliage wires. The canopy is managed by arranging the shoots in the foliage wires and in August by cutting the excess foliage at the top. Average yield is 3.1 tons/acre.

Stony soils of typical blue slate, which heat up quickly when the sun shines, give back warmth during the cold nights. Topsoil depth varies from two feet at the top of the slope to 10 feet at the bottom due to erosion. The pH is about 6.5 and the subsoil is slate.

During winter, we fertilize with compost and manure along with 132–220 lb/acre K_2O, and 35 lb/acre MgO. Increasing the phosphorus content is generally not needed. In summer, 70–106 lb/acre nitrogen are applied.

At 4- to 8-inch shoot growth, spray is applied for phomopsis and oidium. From pre-bloom through last cover spray, we try to prevent phomopsis, oidium, and botrytis.

Riesling needs 180 days without frost to ripen. Bud break is April 15–May 1, berry set occurs by mid-July and veraison by the end of August. Annual rainfall is about 30 inches, with slightly more than 50% coming during the growing season.

PW: When are the grapes picked?

Depending on the year, picking can start as early as October 20 and extend to the end of November. Minimum harvest criteria are 17° Brix and 1.02 g/100mL TA. The ideal ratio between must weight and acidity is 10:1.

PW: How is the wine made?

Usually no SO_2 is added to hand-picked grapes before crushing. In some years, however, it is necessary to add up to 30 ppm SO_2. Bentonite at 1,000–1,500g/1,000L is added to the must. Acid adjustments with Acidex are necessary in some years, but we never adjust to lower than 1.0 g/100mL. Press yield is approximately 140 gal/ton.

Natural yeast ferments the must for a period from 4–8 weeks at cellar temperatures in the range of 46–50°F. First racking off the yeast lees is done in late December or early January followed by a coarse filtration. Racking is done once or twice more as needed. SO_2 levels are maintained at 30–50 ppm during six months' barrel ageing in 60-year-old, 1,000L wooden ovals. Casks are topped weekly.

The wine is bentonite-fined if needed. Both tight and sterile pad filtration is done just before bottling. Bottled wine is aged a minimum of two months before release.

FREIHERR LANGWERTH VON SIMMERN
Hattenheimer Mannberg

PW: Describe your style:

Helmut Kranich: In their youth, our wines have a delicate aroma, but are still quite closed through their first year in the bottle. They have racy Riesling acidity and finish crisp with well-balanced residual sugar.

After 2–3 years, the wine reaches full flavor and taste potential that will last for 10–15 years, depending on the vintage. Near the end of this period, the wine has mellowness and roundness, but retains a crisp acidity.

The delicate bouquet, refreshing acidity, low alcohol, and good body of our wines enables them to pair well with fish, veal, creamy soups, and light meats such as pork and chicken.

PW: Describe the vineyards:

The Hattenheimer Mannberg vineyard, at 295 feet elevation, faces the Rhein River. Sixty percent of the vines are older than 20 years. They were planted, using estate clones, with a mixture of rootstocks, including SO4, 5C, and 26G. The 2,670 vines are planted 4.3x4.3 feet on 20° slopes facing south-southwest.

The traditional Rheingau trellis is used with six wires on posts 5.2 feet high. The first wire is 23.6 inches off the ground, the second at 31 inches for tying the canes. Above this are 2 pairs of moveable wires for canopy management. Riesling does grow vertically. Shoots are caught up with the two pairs of moveable wires. In summer, the vines are machine-hedged when the shoots reach 8–16 inches above the top of the posts. Vines are pruned to 14 buds/vine and yield 3 tons/acre.

The soil is 31-inch-deep sandy loam with imbedded gravel with a pH of 6.8. The subsoil is principally river deposit.

Based on soil analysis, we fertilize every 3–4 years, adding potassium at the rate of 175 lbs/acre. After flowering, nitrogen is applied at 44 lbs/acre if crop size and foliage conditions require it.

Between May 20 and June 25, at 4- to 8-inch shoot growth and in the pre-bloom period, we spray for downy and powdery mildew. From post-bloom through the end of July, we continue

spraying for mildew as well as *Botrytis cinerea*. Additional sprays are used against dead-arm disease and various insects as necessary.

About 26 inches of rainfall is average, with eight inches during the growing season. Frosts are common from December–March. Bud break is April 24–May 10. Flowering usually occurs June 15–25 and veraison August 20–September 10.

Riesling is very sensitive to cold weather during flowering, sour rot during rainy seasons, and high acidity in poor vintages.

PW: When are the grapes picked?

Sugar and acidity are monitored starting at the beginning of September. Picking is during the period October 17–November 12 in most years and is determined by field observation along with the following parameters: 18–22° Brix, 0.95–1.05 g/100mL TA, and 3.0–3.2 pH.

PW: How is the wine made?

Hand-picked grapes are field-crushed with Mortel transporters. Pressing is done within 1–10 hours after crushing with a yield of about 180 gal/ton.

Juice is settled, centrifuged off the juice lees, and fermented by natural yeast. Fermentation takes a period of 2–4 weeks in cellars that are 50–53°F year-round. First racking off the yeast lees is done in late December or January and, depending on the amount of deposit, 1–2 more rackings are done along with filtration, moving the filter grade from coarse to sterile pads with each successive filtering.

German oak casks, ranging in size from 300–2,400L and in age from 20–100 years, are used for ageing the wine. Since our cellars are quite cool and have 100% humidity, evaporation is slowed and topping is done monthly. Free SO_2 levels are maintained at 30–50 ppm.

Our procedure with Sussreserv depends entirely on the r.s. of the wine after fermentation. With each vintage, at pressing, 5–10% of the free run juice from the same vineyard and quality is separated and stored as Sussreserv. One to two weeks before bottling, it is used to raise the r.s. and balance the wine only if needed. Cellar storage at 50–55°F, sanitary conditions, and cold sterile bottling prevent refermentation in the bottle.

Bottling is usually done in May and the wine is stored for 2–3 months before release in September, just about one year after harvest.

ESTATE FREIHERR VON ZWIERLEIN
SCHLOSS KOSAKENBERG
Geisenheimer Klauserweg

PW: Describe your style:

Mathias Decker-Horz: Our wines are best described as possessing a certain breed and elegance with intense fruit supported by tangy, refreshing acidity which marries well with remaining residual sugar.

Optimum drinkability is 4–5 years after the vintage, when the wine has more finesse, developed bottle character, and complexity. It will keep these characters from 7–9 years if well-cellared.

This wine accompanies a wide range of dishes: poached trout, salmon, chicken or crab salad, oysters, clams, smoked fish, as well as a variety of Swiss cheeses.

PW: Describe the vineyards:

The Geisenheimer Klauserweg vineyard, in the lower Rheingau on 40° slopes ranging in elevation between 361 and 623 feet, has southern exposure and is protected from cold north winds by the thickly-forested Taunus Mountains. Both Riesling clones 239 and 189 were planted with 5C and 125AA rootstock in 1977, at 1,500 vines/acre spaced 4.5x5 feet.

A six-wire training system with one wire at 27.5 inches, one wire at 40 inches, two wires at 51 inches and two more wires at 78 inches is used in conjunction with pendulum bow canopy management. Two canes go up and over the second wire (at 40 inches) and back down to the first wire (at 27.5 inches) where they are tied. Shoots are held between the pairs of wires at 51 inches and again at 78 inches. In late winter, vines are pruned to two canes with 27 buds/vine that gives an average yield of 4–4.5 tons/acre.

The soil is deep loess with a pH about 7.0 and topsoil depth of 20 inches. Green manure is used every three years as fertilizer. In other years, grass, planted every other row, is disked into the soil. The vineyard is sprayed four times during the growing season for paranospora, oidium, and botrytis.

There is an average of 17.5 inches annual rainfall and 1,445 sunshine hours during the growing season. Bud break occurs at the end of April, berry set at the beginning of July, and veraison in mid-August.

PW: When are the grapes picked?

Since low acidity is rarely a problem with Riesling, it has always been our policy to let the grapes hang as long as possible, weather permitting, to ensure optimal ripeness. In most years, picking begins the first week of November. Picking criteria includes sugar/acid ratio, 8.5:1 being ideal, overall vineyard health, and weather conditions.

The standard for the Rheingau region is 18.7° Brix for Kabinett wines. We strive for 20° Brix and 0.97 g/100mL TA.

PW: How is the wine made?

As a result of cool mechanical-harvesting temperatures and careful handling, no SO_2 is necessary at crush. Grapes are pressed with stems, but care is taken not to extract bitter tannins by using a gentle bladder press. Total yield is 140 gal/ton. The must is centrifuged to 2% solids immediately and then inoculated with 3% *Saccharomyces cerevisiae*.

A 4- to 5-day fermentation occurs in 1,200L oak barrels in our cellar at ambient temperatures, about 53°F. SO_2 is used for the first time after the first racking at 10–14 ppm. We then fine with bentonite, age in oak for a minimum of six months, filter with polish-grade filter sheets, and back-blend with Sussreserv to about 2% r.s. before sterile-bottling.

We employ the Sussreserv method because it gives complete control over the final outcome of the wine with the added advantage of allowing the wine to ferment dry, thus avoiding additional SO_2 treatments.

Detartration occurs naturally in our cellars at winter temperatures. The wine is given two months' bottle ageing before release.

Riesling Tasting Notes

Tasting Panel:
Bill Arnold
Gary Brookman, *Joseph Phelps Vineyards*
Jill Davis, *Buena Vista Winery*
Eleanor Heald, *PRACTICAL WINERY*
Ray Heald, *PRACTICAL WINERY*
Diane W. Mayfield, *PRACTICAL WINERY*
Don Neel, *PRACTICAL WINERY*
Russ Rosner, *Robert Mondavi Winery*
Craig Williams, *Joseph Phelps Vineyards*

Winemakers interviewed were invited to submit a sample of 1985 Riesling Kabinett. Wines were tasted in a single flight and are listed in the order they were tasted and discussed.

PRACTICAL WINERY thanks Joseph Phelps Vineyards, St. Helena, CA, for hosting the tasting.

Key Industrial Associates

SUPPLIES & EQUIPMENT FOR THE WINE INDUSTRY

• Tri-Clover Pumps, Valves & Fittings
• Specialty Fittings
• Definox Valves
• Strahman Valves
• Anderson Instruments
• Rubbermaid Products
• PVC & Tygon Hose
• MGT Rubber Hose
• Hose Fittings
• Brushes
• Barrel and Tank Washers

"Personalized Service"

997 Enterprise Way Napa, CA 94558 (707) 252-0312

Maximin Grunhauser Abtsberg
C. von Schubert'schen Gutsverwaltung Grunhaus
Ruwer Region

Comments before unveiling:

Davis: All the wines had very good color. This one had green tones and is nice and clean. I got distinct peaches and apples with a sugary fruitiness. This wine tasted like it smelled. It is very important that those two match. It is crisp, with some fruit after-flavors despite the crispness. The wine as a whole is still in the stage of bottle development and is fairly closed.

E. Heald: Are you saying that the crispness is a high-acid balance, or that it is out of balance?

Davis: This current crispness will hold the wine well for the future.

Brookman: I agree with the sugary fruit description. It is a caramel character. I also picked up a lot of SO_2.

Davis: When you consider that these were just-bottled 1985 wines, the SO_2 was not that dominant.

Arnold: I got citric tones and believe that the acidity is too high, and on the side of being out of balance. It also has a leafy character that I associate with underripe fruit.

Rosner: I'd call it a citrus-floral style with a hint of orange blossoms. It is crisp, but given all the other positive characteristics and rich mouthfeel, it's well-harmonized.

Comments after unveiling:

R. Heald: These wines are all subject to testing at a government testing station and the report sent to the wineries, which we have copies of, all distinguish between total and existing alcohol. What this means is that if all the sugar had converted to alcohol during fermentation, then you'd have total alcohol. The existing alcohol is the alcohol in the bottle, which in the case of this wine is 7%. The total alcohol is listed as 9.2%.

Color/Aroma: Pale straw with green tints. Floral, apples, orange blossoms, peaches, vanilla pudding.

Flavors: Green apples, tart, crisp, lemony; same flavors as aromas; citrus, pineapple, leafy, green fruit.

Balance/Finish: Good mouthfeel; refreshing acid/r.s. balance; full, rich, fruity, tart, clean, crisp; medium-long, strong finish.

Hattenheimer Mannberg
Freiherr Langwerth von Simmern
Rheingau Region

Rosner: It's earthy, organic, bordering on stinky, but very different in the flavors, which are rich and peachy. The odd nose just doesn't go with the mouth. It's fuller and less crisp than the first wine and the earthiness comes back in the finish.

Davis: I agree, the taste and the nose don't harmonize. This wine has a softer mouthfeel than all the others.
Neel: I think that the better mouthfeel comes from a higher r.s.
Rosner: Upon retaste, now, the aroma is changing, more like rhubarb.
Williams: I think it tastes fuller because it comes perhaps from a warmer region with different soil composition. Throughout the tasting, I was trying to place the wine in a particular region. From my tasting experiences, I associate the Mosel-Saar-Ruwer with malic, green-apple characters with higher acidity, and the Rheingau shows a riper character and heavier body. This wine suffered from a bitter, almost astringent quality in the finish. Perhaps it stems from too hard pressing.
Color/Aroma: Light, yellow-green straw. Figs, earthy, organic, rhubarb, radishes, citrus, lemon, apricot, piney, honeydew, honeysuckle, complex.
Flavors: Grapy, rich, full, peachy, generous fruit, citrus, lemon, apricot, apples; heavy flavors rather than light and fruity; alfalfa.
Balance/Finish: Slightly flabby, soft, too tart for body, interesting richness in finish; green fruit.

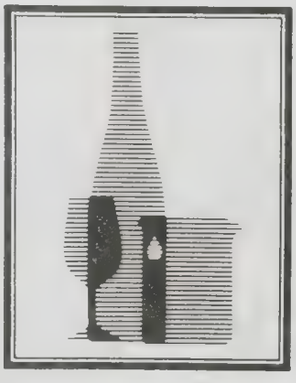
Piesporter Goldtropfchen
Marienhof
Mosel Region

Arnold: I got a caramel tone and an underripe fruit, malate character.
Davis: I thought it had good, ripe fruit—peaches. It has all the flavor characteristics I think of when I think of German Rieslings. Aromas and flavors match very well. When I was in Germany recently, this is most typical of what we were drinking in terms of flavors and balance. I like this wine the best. I see this as a fine dinner wine even at this stage in its young life.
E. Heald: What characteristics does it have that makes you say that?
Davis: When you put your nose in the glass, you don't get a California style, which is more tropical fruit. Everything is subtler in this wine, but well-balanced.
E. Heald: Would you suggest some food complements?
Davis: Baked chicken, pork filet.
R. Heald: It had a spicy character in the aroma.
Rosner: I got an intense apple character in the mouth and I really like that in Riesling. This was my favorite wine, also. It has nice balance, strong apple and pear qualities in the nose, and a crisp finish. Although it's nice now, it has good potential for ageing and gaining complexity.
Color/Aroma: Pale, yellow straw. Grapy, spiced apples, ripe apples, pears, floral. Opens up in glass with airing.
Flavors: Ripe Riesling fruit; melons, dominant apple character, tart peaches, pineapple, pears cinnamon.
Balance/Finish: Full body; good, solid finish; dry, crisp, well-balanced, slightly astringent. Potential exists for complexity with further ageing. Typical 'German-style' Riesling. Stylish.

Trittenheimer Apotheke
Josefinengrund
Mosel Region

Davis: The nose is neutral at first and then yields some apricots and peaches as it warms up. The finish is a little short. What you had left on your tongue was tartness with that peach flavor that turned to dried fruit because of high SO_2 levels.
Williams: There's a good acid/sugar balance. It's young, grapy, and flinty-appley both in aroma and flavors.
Brookman: This wine hit me with high SO_2. I also got a filter-pad character, probably from the rough filtration. This is not a glaring problem, but it's there.
Color/Aroma: Very light yellow to green straw. Slight apricot, somewhat closed, young, grapy.
Flavors: Apricots, peaches. SO_2 showing in taste. Dried fruits. Generally muted flavors. Lingering, subtle fruit.
Balance/Finish: Honeyed; SO_2 coarseness. Good sugar/acid balance. Thin mouthfeel, short finish; fairly long finish; medium-short finish; clean, crisp.

Full Service to Winemakers



Total quality control analysis
Enological consulting
Laboratory supplies

Analysis for export and state compliance, BATF Certified
Yeast and Malolactic bacteria

Complete enological services. Call or write for price list.

VINQUIRY
WINEMAKERS SERVICE AND RESEARCH LABORATORY
(707) 433-8869
16003 Healdsburg Avenue • Healdsburg, CA 95448

PICKERING WINERY SUPPLY

Complete Winery Computer System
$3295 + tax

Includes:
- Nova PC/XT IBM Compatible w/20 megabyte hard disk & amber monitor
- High Speed Printer for draft & letter quality printing
- Integrated Accounting System w/general ledger, a/r, a/p, inventory & payroll
- WordPerfect- the best word processor on the market
- DESQview- a windowing program

Also Available:
Our WineMaster complete wine production program

415-821-2400
1300 22nd St., San Francisco, CA 94107

Niersteiner Klostergarten
Weingut Burgermeister Anton Balbach
Rheinhessen Region

Rosner: Round, fat flavors, petrol aromas, some apricots and musty earthiness with dusty, dry finish. Interesting wine, but it didn't jump out and grab me.

Davis: I can't pick up a fruit definition, but it has detectable r.s.

Arnold: I think this is what Riesling is supposed to taste like. It's viscous and delicious. Is this a declassified spatlese? I've been drinking German wines for a long time, and ten years ago they all used to be like this wine. This is what I think of when you say German Riesling. I also think this is from a warmer growing region.

Williams: To me this wine tastes richer because of where it's grown. It doesn't taste appreciably sweeter to me, just richer and fuller-bodied. This wine tastes very balanced to me.

Monterey County PREMIUM GRAPES AND WINES

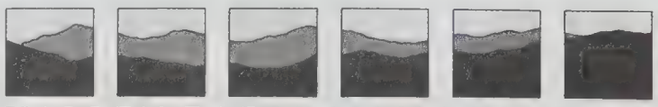
White Varieties Chardonnay
Chenin Blanc
French Colombard
Gewurztraminer
Grey Riesling
Sauvignon Blanc
Pinot Blanc
Semillon
Sylvaner
White Riesling

Black Varieties Cabernet Sauvignon
Gamay
Gamay Beaujolais
Merlot
Petite Sirah
Pinot Noir
Zinfandel

1986 Wines

1987 Grapes, Must, Juice or Wines

Call Now For Specific Information



VALLEY FARM MANAGEMENT

242 Fourth Street, P.O. Box 1900, Greenfield, CA 93927 408/674-2220

Color/Aroma: Light, yellow-green. Slight muscat character (heavier soil suggested), aldehydes, spicy, citrus, honey, slate, melons, carnations.

Flavors: Slight apricot; rich, ripe, slightly fat, spicy, citrus, caramel, sugar, peaches. Excellent varietal character. Married aromas and flavors.

Balance/Finish: Slightly sweet, dusty-dry, low acid, long finish, tart, good acid levels, beautiful ripeness of fruit.

Geisenheimer Klauserweg Schloss Kosakenberg
Freiherr von Zwierlein
Rheingau Region

Brookman: It's very floral with lots of honeysuckle aroma. There are tropical flavors here that were not in any other wine. The mouthfeel and overall texture is excellent. It ended just slightly flabby, but overall it is a well-made wine and drinking nicely now.

Davis: It is especially appealing because of the most interesting nose. There's a mixture of cloves with the fruit.

Arnold: I got a little bitterness in the finish.

Rosner: Besides being floral, this wine has a grapefruit character that I associate with German Rieslings. There's a nice vanilla finish that I didn't get in any of the other wines.

Color/Aroma: Green straw, brilliant. Very spicy, cloves, floral, grapefruit, lemons, honeysuckle.

Flavors: Papayas, melons, appley-citrus, rich, round.

Balance/Finish: Excellent texture, lean, crisp, tart, slightly astringent, smooth, complex, well-harmonized fruit, delicious aftertaste.

Scharzhofberg
Weingut Egon Muller
Saar Region

Williams: This wine gives me good melony fruit and what I call a piney, petrol nose. It has good balance and finish with appley, citrus flavors, and some astringency.

Rosner: I get roses and a delicate, floral character. The flavor character is also much like roses taste.

Davis: I agree with the roses both in the nose and on the palate. Apricots follow the roses in the mouth.

Brookman: It also has that sugary smell we spoke about earlier. I also get a lot of SO_2.

Davis: What I thought was most interesting is how dissimilar these wines were. They each showed their individual style.

Color/Aroma: Light yellow. Roses, radishes, delicate, floral, melons, orange blossoms, hints of caramel, ripe apples, high SO_2.

Flavors: Apricots, citrus, apples.

Balance/Finish: Good balance; medium, firm finish.

PRODUCTION and PROCESSING
equipment — supplies — service
for the wine industry

THE COMPLEAT WINEMAKER
Robert Ellsworth Robert Brakesman
1219 Main Street, St. Helena, CA 94574
707—963–9681 • TWX 510—746–6176
write for our free catalogue

RIESLING WINEMAKING SUMMARY

Winery	Harvest Criteria	Juice Treatments	Fermentation Length/Temp. Yeast	Finished Wine Treatments Fining	Filtration	Sussreserv Statistics	Finished Wine
Burgermeister Anton Balbach *Friedel Bahn*	19-21° Brix 0.72-0.76 TA	bentonite	10-14 days ambient natural	none	sterile pad	yes	8.7% alcohol 1.8% r.s. 0.72 TA SO_2: 40 ppm free 130 ppm total
Josefinengrund *Reiner Meuren*	17-19° Brix 0.74-0.76 TA 3.2-3.3 pH	centrifuged to 1% solids	1-2 weeks ambient *Saccharomyces cerevisiae*	bentonite	DE or tight pad after last racking 0.65μ at bottling	some vintages 0.75 TA	7.35% alcohol 3.5% r.s. 3.30 pH SO_2: 55 ppm free 155 ppm total
Marienhof *Reiner Meuren*	17-19° Brix 0.71-0.74 TA 3.1-3.3 pH	centrifuged to 1% solids	1-2 weeks ambient *Saccharomyces cerevisiae*	bentonite	DE or tight pad after last racking 0.65μ at bottling	some vintages	7.0% alcohol 3.4% r.s. 0.72 TA 3.30 pH SO_2: 60 ppm free 198 ppm total
Weingut Egon Muller *Egon Muller*	17-24° Brix 0.85-1.2 TA 2.7-2.9 pH	bentonite	3-21 days 41-50°F natural	bentonite if necessary	coarse to medium pad; sterile bottling	no	7.3% alcohol 2.86% r.s. 0.78 TA SO_2: 66 ppm free 154 ppm total
C. von Schubert' schen Gutsverwaltung Grunhaus *C. von Schubert*	16-18° Brix 0.90-1.05 TA	bentonite Acidex to no lower than 1.0 g/100mL	4-8 weeks 46-50°F natural	bentonite	tight sterile bottling	no	7.0% alcohol 3.61% r.s. 1.02 TA 3.2 pH SO_2: 40 ppm free 146 ppm total
Freiherr Langwerth von Simmern *Helmut Kranich*	18-22° Brix 0.95-1.05 TA 3.0-3.2 pH	centrifuged to 0.5-1% solids	2-4 weeks 50-53°F natural	bentonite if necessary	coarse to sterile in successive filtrations	depends on r.s. after fermentation	8.8% alcohol 2.85% r.s. 0.93 TA 3.1 pH SO_2: 53 ppm free 132 ppm total
Freiherr von Zweirlein *Mathias Decker-Horz*	19-20° Brix 0.95-1.0 TA	centrifuged to 2% solids	4-5 days 53°F *Saccharomyces cerevisiae*	bentonite	polish-grade filter sheets	yes	8.4% alcohol 2.15% r.s. 0.95 TA SO_2: 35 ppm free 100 ppm total

Winery Electrical Distribution Problems: Ideas and Solutions

Ken Arthur
Oneto & Arthur Engineering, Inc.

In more than 20 years of designing winery electrical power distribution systems, we have found that a common thread seems to run through nearly all such projects—inadequate planning. Generally, the electrical power distribution system is an afterthought. Very seldom is the adequacy of the system considered in the early stages of winery expansion or in future planning. Sometimes it isn't even considered until it becomes a real problem.

It's understandable. Production of premium wine is not usually considered a function of an adequate electrical power distribution system, and generally that is true. When the system is inadequate, however, it takes a very good winemaker indeed to overcome the obstacles.

Most Americans have taken the availability of electrical power pretty much for granted for many years. "Let's just plug it in" has become a common saying in the winery as well as at home. There are, however, certain major electrical problems that hinder a safe, smooth-running, and easily-expandable winemaking facility.

Designing Adequate Electrical Service

One of the most common problems in wineries is inadequate electrical services. Unfortunately, the service is usually designed to provide only enough power for immediate needs, with little to spare. This can prove very expensive. When you plan the electrical service for the first time, or when it's time to replace one that is not large enough, spend some time estimating your projected needs in five or ten years. Factor your percent growth into horsepower.

Taming power at the utilities' distribution voltage (usually 12,000 to 22,000 volts) can be an expensive proposition for a small winery. It requires expensive switchgear such as this unit and the expertise to maintain it.

As a rough rule of thumb, each horsepower requires one KVA (kilovolt-ampere) of power. If you divide KVA by your system voltage divided by 1,000 times the square root of three (1.732), or KVA/(480/1,732), you will get the minimum service size in amps, for a 480 v. 3-phase system. If your system voltage is 240 or 208 volts, use those values in place of 480 in the equation.

It is generally much less expensive to provide now for future needs than it will be to wait until there is a need. When it comes to sizing electrical service, keep this in mind. The difference in cost between a 1,000- and a 2,000-amp service is essentially only the difference between the main circuit protective device and the size of the bus bars in the switchboard. The cost is minuscule compared to that of having to replace the entire service five years from now.

When you leave electrical system design to an electrical contractor, you can end up with an inadequate system. In general, contractors do not get paid for providing an engineering service that allows them time to investigate all your needs, present as well as future.

Furthermore, they are trying to keep project costs low as you have probably instructed them to do. When you delegate the job of controlling your costs to a contractor, you're assuming that he knows better than you what you need. Quite often, contractors don't think much past the warranty period, and that can be costly when it comes to your electrical power distribution system.

Your utility district marketing representative may suggest that you consider taking your electrical power at the local distribution voltage (22,000 volts in most of the Napa Valley, for instance), particularly if you are a relatively large user. Representatives will talk about the savings they give you in the form of a high-voltage discount and the advantages of not having to look to them for new or larger services as you expand.

CRIVELLER COMPANY
supplier for
Small & Large Wineries

WE HAVE NOW IN STOCK
ASBESTOS FREE FILTER SHEETS

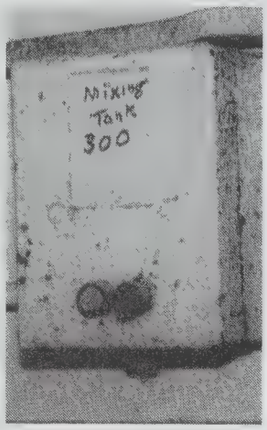
FROM: CARTIERA DI CORDENONS ITALY

CKP V 24	:	STERILIZING	FILTRATION
CKP V 20	:	ULTRA-POLISH	FILTRATION
CKP V 16	:	POLISHING	FILTRATION
CKP V 12	:	MEDIUM	FILTRATION
CKP V 8	:	COARSE	FILTRATION

ATTRACTIVE PRICES AND FAST DELIVERY
CALL US NOW FOR A FREE BROCHURE

DISTRIBUTORSHIP AVAILABLE FOR VARIOUS
U.S. STATES AND CANADA PROVINCES
PLEASE ENQUIRE TO:

CONTACT CRIVELLER COMPANY
In Canada 6863 Lundy's Lane, Niagara Falls
In U.S.A. P.O. Box 162, Lewiston, N.Y. 14092
Ph (416) 357-2930/358-5202 Telex 061-5446



Expanding an old 240-volt system (l) can be very difficult and a waste of money. Proper selection of equipment enclosures can prevent corrosion like this (r) in the winery environment.

Unless you are the size of Gallo Winery, you don't need to consider this option. First of all, the high-voltage discount that is usually available from the utility for taking power at its distribution voltage only offsets transformer losses. In other words, if the utility measures on the primary side of your transformer, the meter doesn't record the power loss through the transformer, so it is rebated in the form of a discount.

Note also that it now becomes *your* transformer. That's right, transformation from the utility's distribution voltage to your utilization voltage (usually 480 volts) will become your responsibility. You must provide the transformer and high-voltage equipment and distribution facilities on your property.

Here's the big snag: Assuming that you are willing to go to the tremendous expense for a high-voltage distribution system within your facility, you now need a whole new breed of electrician that is qualified to maintain it, or become dependent on a qualified outside electrical contractor to provide the maintenance required. Generally, you need to exceed 8,000 KVA (roughly 8,000 HP) to consider primary power as a viable option.

Most often, large refrigeration requirements get many wineries into power difficulties. Refrigeration is usually installed in big chunks for efficiency, and then it's fully utilized only a few months out of the year. Portable trailer-mounted package refrigeration units are becoming popular alternatives to permanently-installed refrigeration, to handle crush season loads. Even though these units are temporary, your electrical system has to have the capacity to handle them.

In PG & E service areas, you end up paying for the short-time load all year long. PG & E averages in your peak month demand with each month's demand to calculate 'demand charge' as a way of charging you for construction of sufficient facilities to meet your maximum demand.

In other words, the system has to have the capability to supply your maximum need within a billing period even if your maximum need only occurs two or three months out of the year. In some instances, engine-driven portable refrigeration equipment may be a more economical option.

240-Volt Systems

Quite often, a 240-volt winery electrical system was originally designed for the initial load, with very little growing room, or was poorly designed for any growth at all. Unfortunately, the electrical power distribution system in most wineries over 30 years old, regardless of how well it was designed, is inadequate in today's power grid and from a safety (or National Electrical Code) standpoint.

Most older wineries still have extensive 240-volt systems, and some continue to expand those systems, which is considerably more costly than an equivalent 480-volt system. Essentially, the conductors and equipment in a 240-volt system must be twice as big as they would be if 480 volts were used to serve the same load. It is often very hard for management to justify the conversion from a 240-volt to a 480-volt system—the wine doesn't seem to improve with that expenditure.

It usually takes considerable system trouble in the form of breakdowns, poor system reliability, or just plain rusted and worn-out equipment before management sees that they can no longer put off the inevitable. The fallacy in that thinking is that, normally, by the time the system has grown to its limit, it has become a very costly situation to turn around.

**OUR BUSINESS IS
KEEPING YOURS GROWING**

COMPLETE AGRICULTURAL LAB SERVICES
Soil, Tissue, Water Analysis
ORCHARD and VINEYARD PEST MANAGEMENT
INFRARED AERIAL PHOTOGRAPHY

Farmecology Labs

Farmecology

1201 Hwy 175 • Hopland, CA 95449 • (707) 744-1191

INNOVATIVE SOLUTIONS
FOR
WINERY PROCESS & DOMESTIC
WASTEWATER
TREATMENT & DISPOSAL

- COMPACT, ODORLESS
- MINIMIZES VINEYARD IMPACT
- AESTHETICALLY COMPATIBLE
- NEW SYSTEMS & REPAIRS
- SITE EVALUATION SERVICES
- DESIGN & DOCUMENTATION
- CONSTRUCTION MANAGEMENT

LESCURE ENGINEERS

707 575-3427

2733 MENDOCINO AVE. SANTA ROSA, CA 95401

If you presently have a 240-volt system, and your 10-year plan calls for a growth rate of 10% or more, we strongly suggest you stop the growth of your 240-volt system now. You don't have to replace it immediately, but begin to develop a 480-volt system and add all new equipment to it rather than to the 240-volt system. This will cause some problems with portable pumps that are presently operating off the 240-volt system, but that's a minor problem compared to the cost of continuing to expand a 240-volt system.

By code, you can have two or more electrical services in your winery if you 1) have exceeded the capacity the serving utility can provide in one service, or 2) have a need for a different class of voltage. In other words, you can have a 240-volt and a 480-volt three-phase service to your facility even though you have not exceeded the capacity of your 240-volt service.

Short-Circuit Protection

Something else has occurred in the utility power distribution grid that has affected your operation, and you probably aren't aware that it's there. It's called 'potential short-circuit current'. As the utility you are connected to has grown to accommodate its 'system' load growth, its potential to deliver short-circuit current into a fault in your facility has increased dramatically. In other words,the utility now serving you has increased the ability of its system to deliver more and more power.

A short circuit in your plant looks like a large load for which the utility tries to deliver sufficient power. Because the utility has greatly improved its delivery system, the components of your electrical distribution system can potentially be subjected to fault currents that may be in excess of your equipment's design capabilities.

A good analogy might be in the visualization of a small dam behind which there is a small reservoir. As a rancher a mile or two downstream, your house and facilities are in very little jeopardy if the dam should break because there is plenty of room for the water to spread out before it gets to your place. But imagine that the dam height has been increased two or three times and the reservoir is much larger. If the dam breaks now, the ranch is in trouble. Like the ranch, your winery may now have potential trouble in the event of a fault within the plant.

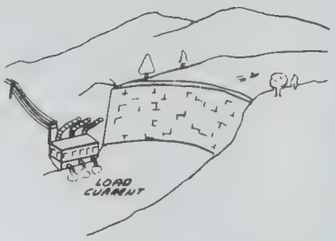


Figure #1

Figure #2

Short Circuit Analogy

Fortunately, you don't have to move your winery to protect yourself. In fact, you might not have any potential trouble if your system was adequately designed, or of such recent vintage (if you will allow us the use of that word) to accommodate the available short-circuit current. Your next expansion should include an analysis of your existing system to be sure that the system can properly and safely handle any short-circuit current the utility is capable of delivering to you.

Electrical Equipment in the Winery Environment

Probably one of the biggest mistakes in the wine industry is the improper selection of electrical equipment to match the harsh environment of a winery operation. Caustic chemicals used and the acidity of the wine itself are enemies of electrical equipment. A good recommendation is to keep as much equipment out of the direct operational area as possible.

Equipment in process areas should be housed in stainless steel, fiberglass, or high-strength plastic. Painted mild steel, no matter how proud the manufacturer is of his paint process, is not worth the cost savings. Devices such as 120-volt outlets and pump receptacles should be made of readily-available corrosion-resistant components.

You should develop a comprehensive specification for the motors and electrical equipment that come as a part of the process equipment you order. Both domestic and foreign manufacturers tend to get a little cheap with these components, and you end up with constant maintenance problems.

The main point here is: do not ignore your plant's electrical needs or view them as a necessary evil. An effective and efficient electrical distribution system requires a great deal of thought and planning. Electrical design may not have a direct effect on the quality of your product, but it certainly influences the efficiency of your operation.

Wine East

The lively magazine that keeps you up-to-date on the news of grapes and wine in Eastern North America.

With 325 wineries located between the Rocky Mountains and the Atlantic Coast, wine professionals and consumers are discovering the importance of keeping informed about this rapidly expanding wine region. Published bi-monthly, *Wine East* contains winery profiles, in-depth features on Eastern grapes, wine and winemaking, and human interest stories centering around Eastern wine people.

Subscription rate: $10.00 for one year ($15.00 in Canada and overseas, payable in U.S. funds)

Write for a free sample and/or a list of other publications available about the Eastern wine industry.

L & H Photojournalism
620 North Pine Street
Lancaster, PA 17603

Eastern Wine Publications

AMERICAN WINE SOCIETY 1967

The American Wine Society is a national, non-profit organization devoted to educating its members and the general public about all aspects of wine-production, use, and appreciation. The Society is independent and has no commercial affiliation.

Membership is open to any interested person; wine enthusiast, professional in the wine business, amateur winemaker — anyone who wants to learn more about wine

Annual (calendar year) dues are $20.00 per individual or couple which includes the Society's quarterly Journal, Special Bulletins and much more.

For free brochure write to: AMERICAN WINE SOCIETY, INC.
Dept. PW, 3006 Latta Road, Rochester, N.Y. 14612
(716) 225-7613

MARKETPLACE

Drip Irrigation, Sprinklers & Pumping

We design, engineer and install sprinkler frost protection systems, drip irrigation systems and irrigation pumping stations.

We can survey your project and design a system that fits in with your agricultural practices. We economically engineer the pipe-sizing for your watering project to require the minimum pumping horsepower. Our systems are engineered to achieve the greatest uniformity and efficiency of water application.

We can provide a water distribution uniformity evaluation of existing drip irrigation systems.

Only top-quality products are supplied. We can supply a watering system that is designed to meet your needs and perform reliably with the equipment we install for the entire lifetime of your crop.

The Water Works
647 Trancas St., Napa, CA
(707) 257-6633

ELECTRICAL ENGINEERING

Complete electrical design services for new and exisiting winery facilities. Preparation of drawings and specifications for the following areas:

- Main Service Design
- High and Low Voltage Distribution Systems
- Heating, Ventilation, and Air Conditioning Power and Control
- Tank Lighting and Valve Control
- Micro-processor Control of Crushing, Pressing, and Tank Refrigeration Operation
- Computer Grade Power Supplies
- Refrigeration Power and Control
- Motor and Pump Control
- Bottling Line Control
- Well and Waste Water Pumping Systems
- Office and Warehouse Lighting and Power Distribution

Oneto & Arthur Engineering, Inc.
922 N. Center Street - P.O. Box 967
Stockton, CA 95201
(209) 464-4775

ENGINEERING

Winery Water & Wastewater Planning, Design & Construction Management Services

Engineering specialties include wastewater recycling and system expansions.

Over 30 years experience in the design of water, wastewater, wastewater solids and utilities systems. Domestic and overseas experience with wineries producing table wines and sparkling wines with production capacities from 5,000 to 2,000,000 cases.

Excellent in-house database on process water use for all sizes of wineries. Obtain your utility design services from someone who knows the wine industry.

Storm Engineering
15 Main Street - PO Box 681
Winters, CA 95694
(707) 795-3506

EQUIPMENT and SUPPLIES

Complete Supply in Stock for Same Day Shipment at Competitive Prices:
Corks—Extra First, light-parafined, sterilized.
PVC Capsules and T/L Capsules in many colors.
Strassburger asbestos-free filter pads.

We represent the following Equipment:
Amos Stemmer/Crushers
Arol Corkers • Clifom Fillers
G&H Products • Kiesel Mixers
Quenard Labelers • Padovan
Strassburger Filters • Willmes Pressers

R.L.S. Equipment Co., Inc.
1017 White Horse Pike - PO Box 282
Egg Harbor City,
New Jersey 08215
609-965-0074 / 1-800-527-0197

GRAPEVINES

Premium Quality Vinifera and Hybrids

Protect your vineyard investment by planting your vineyards with premium quality virus-tested grapevines from Schloss Tucker-Ellis.
We offer a complete selection of benchgrafted vinifera grapevines propagated from premium clonal selections which have demonstrated superior performance in our winery and vineyards. In addition, our vines are propagated only from virus-tested rootstock and scionwood cuttings. Rootstocks include Oppenheim SO4, Kober 5BB, Couderc 3309, Richter 110, Riparia Gloire and any other requested rootstock.
We also provide a large selection of French Hybrids and table grapes. We can ship vines throughout the United States, and will custom-graft any variety.

Hubert Tucker
Schloss Tucker-Ellis Vineyards
RD 1, Box 125B
Waterford, VA 22190
(703) 882-3375 (Nursery) (703) 882-3624 (Winery)

LAB ANALYSIS and SUPPLIES

Analytical Equipment and Winery Chemicals, Fining Agents, Malolactic Bacteria and Yeast are available.

Winemaking Consultation and Classes—

Please inquire about upcoming classes and consultation tours in California and the U.S.A. Topics include: Making Cellaring Decisions, Sensory Effects of Wine Spoilage, Sensory Evaluation, Microbial Spoilage of Wine, Microbiological Testing for Small Wineries, Microscopic Identification of Wine Microbes and Sentiments, Evaluating and Treating Wine Defects.

The Wine Lab
477 Walnut St.
Napa, CA 94559
Order Phone Machine: (707) 224-7905
Lab/Office: (707) 224-7903

PERSONNEL SERVICES

Recruiting and Placement

The Only Personnel Department of the Wine Industry

We can help you make the best hiring choice with only your Winery's interest in mind.

At Snelling & Snelling, that's our business. We're professional Wine Industry Personnel Recruiters. Our network includes hundreds of Wineries and wine-trained personnel.

Let Donna Parker of Snelling & Snelling be your personnel department. Call us for more information.

Snelling & Snelling
85 Brookwood Ave., Suite #2
Santa Rosa, CA 95404
(707) 546-8010

SOFTWARE for COMPUTERS

The Winemaker's Database

is a complete bulk wine information management system, which can be easily customized to your needs. The software is available in both single-user and multi-user versions and runs on almost any personal computer. A hard disk is required.

The program is complete, powerful and very flexible, yet is easy to use. Personal support via modem for all installations is provided as well as on-site support as needed.

See story, "Winemakers' Database: Information Retrieval Simplified" in Nov/Dec 1986 PRACTICAL WINERY for more information.

James Vahl
1361 St. James Drive,
St. Helena, CA 94574
(707) 963-5423

VINEYARD CONSULTING

For guidance in developing wine quality from the vineyard and trouble-shooting of wine-related defects. Call for an appointment.

- Pre-purchase investigation/assessment of vineyards and unplanted land.
- Redevelopment planning of established vineyards.
- Vineyard block designing for soil, slope, spacing, rootstock, trellis, and grape variety.
- Diagnosis of vineyards for nutritional, pest, and disease problems.
- Contracted research projects
- Wine grape brokerage

Richard T. Nagaoka
1620 Scott Street
St. Helena, CA 94574
(707) 963-1113

PRACTICAL WINERY MARKETPLACE listings are accepted for three-time consecutive insertions at a rate of $255.00 ($85.00 per issue). Listings must be prepaid upon submission of ad copy. Contact **PRACTICAL WINERY** for further information and copy deadlines at (415) 479-5819. Please send copy and prepayment to **PRACTICAL WINERY**, 15 Grande Paseo, San Rafael, CA 94903.

Contingency Planning

George M. Schofield

Many wineries and vineyards now schedule long-range planning sessions as formal, periodic exercises of a high priority. Tremendous capital requirements, long lead times between investment and market impact, and the intense competitive nature of the industry have forced recognition of the role of planning in economic success.

General Planning

Those vintners and growers who have not implemented formal planning are often confronted with five-year financial forecasts as the *sine qua non* of loan renewals or approvals. What begins as a forced chore, however, is often completed with a much better appreciation of business operations.

The use of long-range projection requirements by banks and other financial institutions is an indication of increasing sophistication in credit analysis. Underlying this movement is a definitive shift to cash flow factors as lending criteria. Traditional asset lending with prime emphasis on collateral values is becoming an anachronism. Superseding is an orientation towards operating performance as reflected in projections and actual results. Collateral values still need to be present, but per se are not sufficient.

Credit Considerations

Most recently, a new requirement by financial institutions is emerging in loan documentation. In an effort to add another dimension to projections, 'contingency' plans are being frequently requested. 'Back-up' or 'downside' plans are synonyms for this.

From the creditor's viewpoint, the aim is to avoid the necessity of resorting to calling on collateral security. More preferable is a set of management actions to bring projections and operating results back on track early on. A simple list and vague commitment is generally not adequate. The key is specific trigger points: the specific conditions the occurrence of which would lead to implementation of the indicated actions.

Definition

To the befuddled winery or vineyard, a contingency plan is usually explained as an outline of a series of steps to be implemented in the event of unfavorable developments. The stated purpose is to alleviate concern ahead of time should a deteriorating situation occur. Sounds simple and innocuous. Unfortunately, it is usually neither.

By definition, contingency planning is not part of the primary plan. Because of some undesirable feature, management is often reluctant to commit to and implement the contingent actions. Non-conformity with long-term goals, and premature timing are common reasons for hesitation.

Prototype

The following examples of a hypothetical contingency plan give some indication of the nature of compromises that a winery might face.

Sales:

1) Should sales volume fall behind plan in 1987, an accelerated program of opening new markets would be initiated. The winery would prefer to fully evaluate over the next year alternative candidates to appoint as wholesale distributors in upstate New York and the states of Wisconsin and Minnesota. A shortfall of 1,000 cases could be overcome by appointing distributors in the three regions by May 1, 1987, rather than January 1, 1988.

The trigger point for implementing would be a −5% cases sales variation on a year-to-date basis from the level of 1986. Sales performance would be evaluated each quarter beginning March 31, 1987.

2) The winery would prefer to avoid deep and frequent discounting as a means of generating sales. Such promotions are not consistent with the image and long-term profitability objectives. However, to boost lagging sales, the company could add a third price 'post-off' promotion in the month of September, similar to the $5.00/case price reduction planned for the months of June and December.

The decision point for adding the third program will be July 15, 1987. If case sales are more than 10% below projections on a year-to-date basis as of June 30, 1987, the extra sales promotion will be implemented.

3) Since inception, the winery has avoided the low-margin, low-image private-label wine market. Should case sales be more than 20% behind projections by mid-year, an aggressive program of soliciting sales from major chain stores in California will be implemented. The company would offer discounts of up to 30% on truckload quantities of 1,000 cases or more.

Production:

1) High-quality grapes purchased from the same growers have been a vital aspect of wine quality. The winery is reluctant to disturb its harmonious grower relations. However, if by June 30, 1987, inventory growth exceeds the prior year by $50,000, negotiations will be opened with selective growers so as to proportionally reduce the crush level for 1987 to the annual sales level as of June 1987.

2) If negotiations with growers cannot be concluded without the risk of litigation, the company will place a sufficient amount of its premium bulk wine on the market so as to avoid an inventory build-up in excess of $50,000.

Equity:

Three estate vineyards, which are owned separately, are valued highly by the proprietors. However, should a loss of $100,000 or greater be experienced for the year 1987, one of the vineyards would be sold in early 1988. The cash proceeds, after related income taxes, will be contributed as additional capital to the winery.

Use by Creditors

The examples illustrate how painful a contingency plan can be. The tendency, therefore, is to be general and vague. Internally, such tactics may be deliberately encouraged, albeit financial institutions have quickly learned the need for being specific. Accordingly, wording which may result in empty promises and procrastination is often returned for clarification.

As long as a borrower is in full compliance with all terms of a loan agreement, financial institutions can offer counsel, but seldom intervene in business operations. Many wineries and vineyards mistakenly assume compliance means only making timely interest and principal payments. The advent of the use of technical default has widened this interpretation significantly.

Loan commitment letters and agreements increasingly are in-

cluding a multitude of covenants and warranties. Accordingly, conditions of default are extended to non-compliance with limits of total debt, ratios of debt to equity, minimum working capital, and other similar measures of financial results. The effect of such 'technical' default, to the dismay of wineries and vineyards, is identical to non-payment.

Leverage of Default

Most financial institutions will not call loans because of technical defaults. However, such conditions give financial institutions tremendous leverage in persuading customers of the need to implement contingency plans. Particularly where cross collaterization of lines of credit with term loans has occurred, a complete and sudden refinancing need can be precipitated.

Contingency planning should be approached cautiously and realistically. In cases where financial institutions insist on such downside planning, the request forces wineries and vineyards to do what, as prudent businessmen, they should have done in the first place. The enigma is how to be meaningful yet not overcommitting. At some future point, the document may well be brought forward again as the solution to a difficulty.

Upside Planning

Although the prime emphasis of contingency planning tends to be in a negative context, much benefit can be gained by specifically thinking about upside developments. If sales exceed plan levels, a sales allocation system may be necessary to avoid serious customer relations problems. Similarly, a selling price increase or the deletion of a 'post-off' promotion should be considered at certain points of volume increases. Revisions to grape purchase plans or bulk wine purchases may be also warranted to protect future sales if conditions improve significantly.

Summary

A common misconception is that planning is a theoretical exercise. Real planning is a decision-making process. Against the backdrop of realistic simulation of probable future circumstances, policy and operation decisions can be made on a coordinated and informed basis. Refinements and revisions may well be necessary as conditions vary, but the availability of a roadmap is an invaluable guide.

Planning exercises generally result in a single course of action. Occasionally, another dimension is added by 'worst-case' projections. However, most often 'worst case' is a misnomer generally representing only a slightly more conservative version of the primary plan.

Even more beneficial is contingency planning which preconsiders actions if conditions vary significantly from the expected. Management ought to identify specifically how it would cope with increasingly deteriorating circumstances. Readily-available, well-thought-out reactions with defined trigger points may overcome the inertia which is prevalent in many crises.

The blind hope that next month or year will be better is hard to abandon. Time is often the critical factor. Most deteriorating situations can be rectified if caught before resources or equity are too badly depleted. By setting up pre-ordained steps, contingency planning not only provides direction, but gains invaluable time.

Conclusion

Financial institutions have always been bothered by the need and method of intervention in troubled situations. The evolution of contingency planning is likely to be a convenient and practical solution. Commitment to pre-agreed actions is gaining acceptance as a mechanism for managing credit risks.

Regardless of whether contingency planning is required by their banks, wineries and vineyards should seize the initiative in developing such plans. By doing so, pitfalls may be avoided, and those encountered would have less severe effects. The dilemma is how much to reveal to outsiders. From a practical viewpoint, the best compromise may be a comprehensive internal plan and a second, summary version, omitting some drastic alternatives which are best kept confidential.

DON'T MAKE WINE WITHOUT IT!

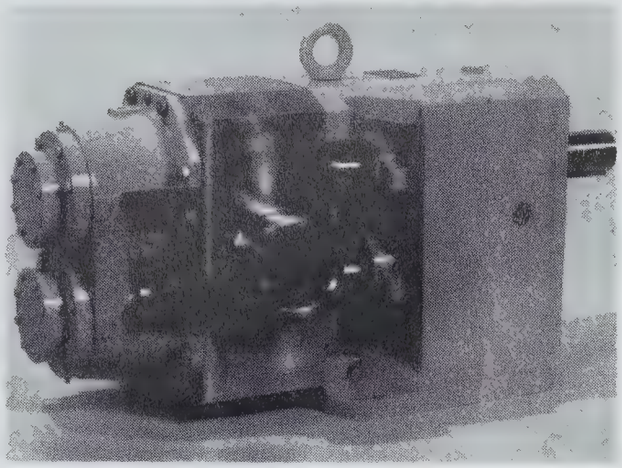
Replacing your wooden bungs this year? Fabricated from high grade silicone, the Boswell bung easily outperforms its fir and redwood ancestors. The Boswell bung puts a

stop to wicking and requires no pretreatment. Easy to place and remove, the Boswell bung provides extra protection for your valuable barrels. The Boswell bung. Cost efficient. Pure and simple.

For more information contact The Boswell Company
36 Crane Drive, San Anselmo, CA 94960
415 · 457-3955

THE BOSWELL COMPANY

YOU NEED A LOBE PUMP!



Flow up to 700 gpm at up to 200 psi
Call us and we will select the correct pump and drive unit for your needs.

ALBIN PUMP AB
120 INTERSTATE NORTH PARKWAY EAST, SUITE 208
ATLANTA, GA 30339
TELEPHONE: (404) 980-0366

Control of Grape Powdery Mildew

Carole Taines

Ever since grape powdery mildew was first identified in California, on Mission grapes in an Alameda County vineyard in 1859, it has been a major consideration for California's vineyardists and winemakers.

Powdery mildew is a major economically destructive grapevine fungal disease present in California vineyards. It is more severe in dry climates and is not dependent on high relative humidity for spore release or free water for spore germination. This characteristic distinguishes it from downy mildew, one of the most economically important grapevine diseases in the eastern United States and much of Europe.

Grape varieties most susceptible to powdery mildew include Chardonnay, Cabernet Sauvignon, Chenin Blanc, Carignane, Thompson Seedless and Cardinal.

Characteristic Symptoms and Detection

Symptoms of the disease include patches of white to grayish growth on young tissues, leaves and clusters. Growth is usually observed on the under side of sun-exposed leaves, but is often present on both sides of shade leaves. The mycelium and spores, which are chain-like in appearance, are easily seen with a 10X power hand lens. The fruiting bodies (cleistothecia) are tiny spheres that change from white to yellow-brown to black. Past infections appear as red stain-like scars on canes in the winter.

Powdery mildew is an obligate parasite and requires living tissue to grow. The fungus sends feeding organs (haustoria) into plant epidermal cells to extract nutrients. Leaves become distorted and discolored, flowers may fail to set fruit, small berries may drop off and large berries scar or crack, stems may become weak and brittle. According to Phillip Wagner, (A Winegrower's Guide, 1982) wines made from heavily-mildewed grapes have a characteristic musty off-odor that the French call oidiee, from their word for powdery mildew, oidium.

Sulfur Prevention and Eradication of Powdery Mildew

Grape powdery mildew was first identified in France in 1854, after being introduced on American vines. Within a decade of its appearance, a Frenchman named Mares discovered a preventative—sulfur dust applied to all green parts of the vine.

This method was adopted in California in 1859 and continues to be used extensively today. Sulfur, which is fat-soluble, is thought to penetrate the spore membrane and interfere with respiration.

The management program currently recommended by the University of California (Grape Pest Management 1982) includes dusting 14 days after budbreak and every 14 days thereafter until the average sugar test is 12–13° Brix. If alternate middles are treated, the interval should be shortened to 10 days. In years of rapid growth, dusting should begin when shoots are six inches in length, and be repeated at the 12-inch and 18-inch stages and every 14 days thereafter until 12–13° Brix.

Some growers use the Mildew Index developed by Dr. Mary Ann Sall at UC Davis (California Agriculture 37:4-5, 1983) as a basis for their management programs. The index uses temperature data to plan application schedules, and integrates development of mildew, vine growth, and sulfur vaporization.

Eradication of existing mildew infections necessitates the use of high volumes of water plus wettable sulfur, and wetting agents which reduce the surface tension of water to improve vine coverage. Early in the season, 200 to 300 gal/acre of spray mixture may be required by average vines, while middle to late season requirements may range from 300 to 400 gal/acre.

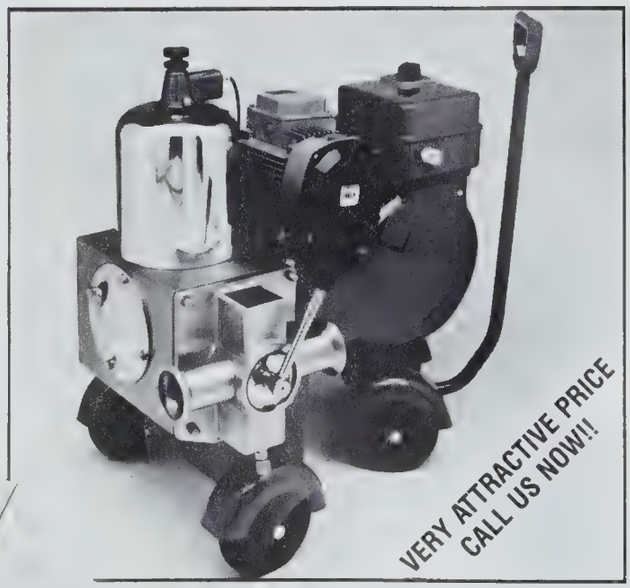
Advantages of using sulfur dust include low material cost (about $0.14/lb) and the toxicity to Erineum mites. Disadvantages include frequent application to be effective, irritation to user's eyes and mucous membranes, and potential burning of young plant tissue.

Development of Sterol-Inhibiting Fungicides

Most growers who have employed timely and consistent mildew prevention programs have had relatively mildew-free harvests using sulfur dust. Dissatisfaction with sulfur has come not from growers, particularly, but from winemakers. Elemental sulfur present on grapes at harvest has been positively correlated with the occurrence of H_2S in resultant wines by researchers since the 1960's (B.C. Rankine, J.Sci.Fd. Agric., 1963).

Thoukis and Stern (1963) estimated that as little as four grams of sulfur per ton of grapes delivered to a winery is sufficient to cause H_2S problems. Although other factors such as the yeast strain may play an important role in H_2S formation, it is generally recommended, and often requested by wineries, that sulfur be applied only early in grape development.

The necessity of late-season sulfur application, which is sometimes dictated by early rainfall combined with continuing

CRIVELLER COMPANY
supplier for
Small & Large Wineries


– ssing equip. – centrifugal & piston pumps
– ent – chemical & filter sheets
– atment of – yeasts & enzymes
– oenocyanine & other specialties
CRIVELLER COMPANY
3 Lundy's Lane, Niagara Falls
ox 162, Lewiston, N.Y. 14092
30/358-5202 Telex 061-5446

mildew pressure, puts growers in a precarious position: their grapes may be unacceptable at the winery if high levels of residual sulfur are present at harvest.

In the 1970s, ergosterol (sterol) inhibiting fungicides were developed. These materials interfere with a structural component in the fungal cell membrane, thereby causing death to the fungus (Gittings, 1983). They are absorbed, translocated and active in the plant. Applied at the recommended rates, they are not phytotoxic to grapevines. Triadimefon (brand name, Bayleton) is an example of this type of fungicide.

In experiments conducted by Dr. Sall and UC Davis graduate students in 1983, sterol-inhibiting fungicides gave better mildew control than sulfur: they eradicated existing colonies and reduced the percent of infected leaves and clusters, while having no effect on berry sugar, pH or titratable acidity.

When Bayleton became generally available in the U.S. in 1982, many growers experimented with it in small plots. Thereafter, it was frequently incorporated into management programs, complemented by sulfur. In many cases, growers completely switched from sulfur to Bayleton. Wherever it was used, Bayleton was found to be not only effective in mildew prevention and control, but also more economical to use than sulfur in the long run, because fewer applications were necessary. The originial recommended rates were four to six-oz every 14–21 days, which might amount to three or four applications/season.

High Powdery Mildew Pressure in 1985 and 1986

Then came the 1985 growing season, which turned out to be one of extremely high mildew pressure. There were reports of mildew infection throughout California, even in vineyards where Bayleton was used. This phenomenon repeated in 1986, which many growers called the 'perfect' mildew season because of many overcast days and lower than usual temperatures.

The high incidence of infection, relative to 1982, 1983 and 1984, was attributed to various possible causes: 1) early growing seasons; 2) ideal environmental conditions for the fungus; 3) delayed initial fungicide applications; 4) poor coverage of fungicide material; 5) cultural factors which contributed to high humidity and poor air circulation (improper canopy management and weed growth between rows); and 6) possible powdery mildew resistance to Bayleton.

In an effort to clarify the grape powdery mildew situation, *PW* interviewed several viticulturists and asked, "What was your management strategy in 1985 and 1986, what observations did you make in the vineyard, and what changes are you considering for 1987?"

Sonoma County

Paul Vossen, UC Cooperative Extension horticulturist in Sonoma County, CA, said, "Vineyard managers were caught unaware in 1985 and 1986, because 1983 and 1984 were very hot and not conducive to abundant powdery mildew development. I recommend a combination strategy of applying Bayleton initially when shoots are about six inches long, then one or two sulfur dustings, thereafter alternating Bayleton and sulfur. Bayleton works well, but the maximum applicaton interval should be 17 days. Early application and complete coverage are imperative."

Jim Young, a grower in Alexander Valley, applied sulfur at 10

lbs/acre in 1985 when shoots were six inches, 12 inches, and 18 inches long and every ten days thereafter. He switched to Bayleton at 4 oz/acre at the shatter stage because sulfur burns delicate berries. "We pulled leaves," said Young, "and shoot-thinned just before applying Bayleton to open up the interior of the vine to increase the effectiveness of Bayleton.

"In the cool 1986 growing season, we applied sulfur until the shoots were almost 24 inches long and every ten days thereafter. In late June we applied 6 oz/acre of Bayleton and sulfur-dusted 1–2 times before the end of the season. We will add one more Bayleton application in 1987 because we did get some burn with the sulfur. We did not have severe infection or any crop loss in 1986.

Dennis Murphy, another grower in Alexander Valley, has had 100% mildew control with Bayleton when he 'followed the rules'. "You must start early," says Murphy. "Waiting until bloom is too late. We apply 4-oz/acre of Bayleton when shoots are 12–14 inches long. We apply another 4-oz/acre three to four weeks later. We usually make one more application, 3–4 weeks later (depending on temperature and wind conditions) and one close to veraison. We switched to Bayleton in 1982 for convenience and because wineries don't like late-season sulfuring. In 1987, I am considering more frequent applications at lower rates."

Napa Valley

Tucker Catlin, viticulturist at Sterling Vineyards, Calistoga, CA, designs his program based on the mildew pressure of each vineyard area. "Generally, we sulfur-dust every 10–14 days based on the weather and the rate of growth until bloom," says Catlin. "The 1985 and 1986 growing seasons required more frequent dusting due to warm spring weather and rapid early growth."

Catlin describes his program: "After bloom, in areas of high mildew pressure, we use 2 lbs/acre wettable sulfur and 3 oz/acre Bayleton every 14–21 days for a maximum of four applications. This routine is employed on the coolest ⅓ of our acreage. To stretch the Bayleton, a sulfur dusting may be inserted between sprays.

"Tractor speed is very important in achieving thorough coverage; spraying is done at 2 mph to apply 100 gal/acre of water. We monitor potential 'hot spots' twice a week. Applications cease at 8–10° Brix. For 1987, we are considering post-harvest Bayleton as a sanitation measure where infections have established a foothold."

Phil Freese, viticulturist for Robert Mondavi Vineyards, Oakville, CA, recommends a mildew control program which addresses two basic aspects. 1) The severity of the disease pressure as related especially to the current growing season and 2) the projected harvest date.

"We, of course," says Freese, "want complete control without having to use late season wetable sulfur applications while trying to achieve the earliest sulfur application cutoff dates. The equalizing factors here are wine quality, minimizing potential for sulfur-related fermentation or diseased fruit problems, and the most cost-effective disease control.

"Especially in red grapes where the fermentation is carried on in contact with the skins and rachis, we would like to see sulfur applications cut off near bloom, if possible. Our mixed program would be sulfur in the early season and Bayleton in the late season. We have some experiences which support improved characteristics in wines from vineyards which have changed from historical full season sulfur programs to the above mixed program.

"Following a high pressure year such as 1986, where we still saw conditions which allowed some active growth of mildew on tender shoot tips post-harvest, I favor the first control measure of the 1987 Spring to be a wetable sulfur application at six- to eight-inches of shoot growth. Then I would suggest a dusting program as a preventative until shifting into a sterol inhibitor program."

Jim Frisinger, viticulturist at Beringer Vineyards, St. Helena, CA, has used Bayleton since it was available in 1982, first in

continued on p. 47

THE MOST BEAUTIFUL BOTTLES IN THE WORLD

I'm not alone when I say that the Verreries du Puy-de-Dome makes the most beautiful bottles in the world. Our customers have blind 'sightings' and our bottles win. One of our competitors paid us a great compliment by using one of our bottles in his ad! He must really be crazy over Puy-de-Dome!

At Puy-de-Dome we make dead leaf tint Burgundy bottles every day of the year. We put them on pallets and in boxes. And now, every 750 ml Burgundy bottle we sell, whether in France or America, says '750 ml' on the base. That way you won't have labeling problems with the BATF over contents.

And, before palletization, every bottle is checked for strength and bore entry, so you don't have to worry about the cork fit. You've done everything to make the best Chardonnay or Pinot Noir. Why put it into anything less than the best bottle?

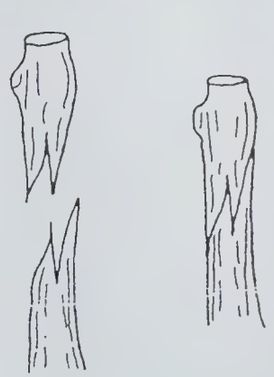
Sincerely yours,

Mel Knox

MEL KNOX
Barrel and Bottle Broker

1229 Third Avenue, San Francisco, California 94122
(415) 661-3413 (415) 661-1616 Telex #556655 TONNEAUX

Benchgrafts



of certified, heat-treated
available greenhouse grown
or dormant fieldgrown

Rootstock selections include:
S04, 110R, Riparia Gloire,
Paulsen 1103 and others.

Orders also being taken for 1987-88 delivery.

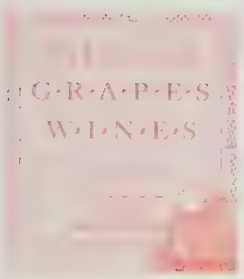
M & H Vineyards, Inc.
P.O. Box 2470, Yountville, California 94559
Telephone (707) 944-8844

THE WINE PROFESSIONALS' BOOK SOURCE

• Your wine book needs promptly shipped from one source, telephone orders accepted, Mastercard and Visa. SATISFACTION GUARANTEED!

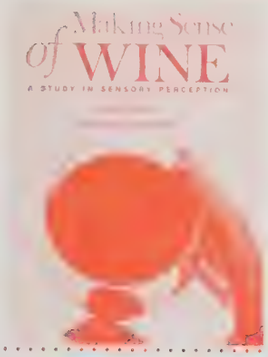
• PLUS, FREE BOOKS! We will include a bonus book of our choice FREE for every three books you order. Buy 9 books, get 3 Bonus books, buy 12 and get 4, etc...

KNOWING & MAKING WINE by Emil Péynaud
Essential for every wine professional! A complete survey of wine-making techniques, wine appreciation and latest scientific developments. How to apply the results of enological research to everyday practices and solving winemaking problems. 391 pp, hdbnd #898 $34.95



VINES, GRAPES & WINES by Jancis Robinson
At last a comprehensive evaluation of all major wine producing areas of the world based on grape varieties. The wines and grapes are explained in terms of characteristics of the variety and its relationship to the climate, soil and viticultural practices. Magnificantly illustrated in color with detailed drawings of the grapes. 280pp, #960 $29.95

CHAMPAGNE by Tom Stevenson
First major new work on Champagne in 15 years. The most comprehensive evaluation of their viticultural and vinification practices. Village-by-village assessment of all Grand Cru & Premier Cru communes, profiles on 90 Champagne houses, 24 Cooperatives, directory of 300 growers, listing of 1,400 wines and tasting notes on 500 along with vintage assessments. Over 60 illustrations, 416 pp, #947 $39.95



MAKING SENSE OF WINE by Allan Young, foreward by Robert Mondavi
A completely new approach to sensory appreciation and evaluation of wine. Breaking new ground in wine evaluation with scientifically sound sensory physiology and practical exercises for the serious amateur or wine professional. A disciplined approach to improving your wine tasting skills and recording your results. Excellent charts & illustrations. 167pp, #979 $19.95

ORDER FORM

14 MORE BOOKS LISTED ON BACK SIDE OF THIS FORM

PRACTICAL WINERY BOOKSHELF
15 Grande Paseo, San Rafael CA 94903

Phone Orders Accepted
(415) 479-5819

Please send me the following books:

QUANTITY	TITLE	No.	PRICE

Check, Money order or credit card only: ☐ Visa ☐ Mastercard

California add 6% sales tax _____

Account Number _____ Expires _____

Shipping and handling $3.00

Name _____ **TOTAL** _____

Address _____

City _____ State _____ Zip _____

I have ordered _____ books, please send me _____ FREE bonus books of your choice. (Note: Bonus books are from our publisher overstock section and valued at $4.95 each or greater.)

ADDITIONAL IMPORTANT WINE BOOKS:

COMMONSENSE BOOK OF WINE by Leon Adams. New edition of this best selling classic on fundamentals of wine and its enjoyment. 260pp #508 $7.95

WINE AN INTRODUCTION by M.A. Amerine. Popular textbook for sophisticated wine enthusiastes & intermediate classes. 270pp, #512 $7.95

WINE SCANDAL by Fritz Hallgarten. Reliable exposé of the illegal winemaking practices of Germany, Italy, Austria, France and historical notes on most wine scams. 184pp, #946 $18.95

TABLE WINES, THE TECHNOLOGY OF THEIR PRODUCTION by M.A. Amerine & Joslyn. The classic professional winemakers text. 879pp, #509 $35.00

WINES, THEIR SENSORY EVALUATION by M.A. Amerine & E.B. Roessler. The standard and authoritative text on the subject. 250pp, #511 $23.95

TECHNOLOGY OF WINEMAKING by Amerine, Berg, Kunkee, Ough Singleton & Webb. Fourth Edition includes latest technical developments. 812pp, #699 $49.50

COMMERICAL WINEMAKING, PROCESSING AND CONTROLS by Richard P. Vine. Practical methods & technical data for operating a small winery. 400pp, #712 $32.50

METHODS OF MUSTS & WINES ANALYSIS by Amerine & Ough. Provides technique and data necessary for winemaking. 341pp, #732 $58.95

MODERN WINEMAKING by Phillip Jackisch. A clear step by step guide to wine production to maximize quality. 280pp #907 $25.00

WINEMAKING IN CALIFORNIA by R. Tieser & C. Harroun. The comprehensive & well researched history of wine in California. 239pp #759 $24.95

GENERAL VITICULTURE by A.J. Winkler, Cook, Klierwer & Lider. The definitive book on grape growing from U.C. Davis. 780pp, #549 $29.50

A PRACTICAL AMPELOGRAPHY, GRAPEVINE IDENTIFICATION by Pierre Galet, translated by Lucie Morton. All varieties, hybrids, rootstocks, etc. 256pp, #610 $39.95

OREGON GRAPEGROWERS GUIDE by Oregon Winegrowers Association. Excellent technical resource for establishing & maintaining a vineyard. 132pp #888 $20.00

VINE TO WINE by Richard Lyon. Photographic essay on viticulture depicting the natural source from grape to wine. #930 $9.95

PLEASE SEND THIS FORM AND YOUR PAYMENT TO:
PRACTICAL WINERY BOOKSHELF
15 Grande Paseo
San Rafael, CA 94903

Weather Stations Assist Growers

A network of automatic meteorological observation stations has been established in California's north coast region to aid vineyard management decisions of growers by providing near real-time weather information and biometeorological data. Weather Network, Inc., (dba Nowcasting), a Chico, CA-based weather forecasting firm involved in agricultural meteorology since 1980, has stations in the Napa Valley at Carneros, Yountville, and Rutherford, with more sites planned.

Growers must make weather-related decisions including irrigation scheduling, chemical applications, frost protection, and harvest scheduling. Daily weather data provide information on powdery mildew development and evapotranspiration rates, while climatic data assist in tracking grape maturity, thus aiding harvest date predictions.

During the 1985 harvest season, Nowcasting provided a detailed localized daily forecast service to several Napa Valley wineries, including The Christian Brothers and Robert Mondavi Winery. Information gathered during the forecasting project and a detailed weather study performed in the Stag's Leap District revealed a need for a network of automatic weather stations in the valley to monitor individual mesoclimates and daily weather features.

Two Weather Stations Installed

Charles Hossom, viticulturist at Inglenook-Napa Valley, agreed to installation of the first two weather stations in vineyards at Rutherford and Yountville. The first station was installed in April, 1986.

Napa Valley Vineyard Company also saw a need for localized weather information, and agreed to installation in May, 1986, of a station in a Carneros vineyard which they operate.

Each weather station sits on a tripod frame within the vineyard and can easily be located so that it does not interfere with tractor movement. Each station is equipped with two thermistors, one each to measure air and soil temperatures. A humidity sensor provides readings of relative humidity and dew point, while a pyranometer measures solar radiation. The stations are also equipped with wind speed and direction sensors and a rain gauge to monitor precipitation.

Each sensor (except the rain gauge) samples the environment once a minute and saves the data (if required, based on the program) in the micrologger, a small computer at the weather station. Data are recorded hourly at the individual weather stations. A microcomputer at Nowcasting's Chico office is utilized to gather the data once each day. The data are then loaded into a computer database, which can be accessed on a near real-time basis by subscribers to the information network.

In addition to hourly observations, daily summaries of the meteorological and biometeorological data are computed weekly. These include maximum and minimum temperature and time; maximum wind speed and time; average daily temperature, soil temperature, and relative humidity; total daily precipitation and solar radiation; wind run; degree-days; reference evapotranspiration; and powdery mildew index.

Network subscribers receive the data via Weather Network, a computer database, or the mail. A microcomputer equipped with telephone communications is necessary to receive files from Weather Network. The Weather Network database also gives the user access to all the latest National Weather Service forecasts and to the specialized weather forecasts issued by Nowcasting for the Napa Valley.

Uses for Nowcasting

Hossom sees three primary uses for the Nowcasting system. First, he points out, is the meteorological use, especially during the frost and harvest seasons. "The system," Hossom says, "functions as a frost alarm in the spring, so that we can react accordingly to protect the vines. This use may become especially important in the future if the federal frost forecasting service, which is currently threatened by Reaganomics, is cut entirely. The system will also tell you how much rain (if any) is falling during harvest, so you can plan your picking schedule to minimize the weather effects on the crop."

The second use is biometeorological. Hossom explains, "The powdery mildew index, for instance, tells us how fast the mildew is regenerating, or sporulating. Those who control powdery mildew by dusting with sulfur only will find this particularly useful in developing a sound program. We, however, have sprayed with a mixture of wettable sulfur and Bayleton, and the index at this point is set only for sulfur. Bayleton requires a different index."

The powdery mildew index was developed by UC Davis researchers. The index is calculated daily from each day's maximum and minimum temperatures. The index can be used by taking the last date on which a sulfur dusting was done (June 15, for example) and checking the accumulated powdery mil-

Vineyard Weather Station

NOWCASTING'S
NAPA VALLEY FORECAST
MONDAY AUGUST 25, 1986 3 PM

.
PATCHY NIGHT AND MORNING LOW CLOUDS AND FOG WILL STRETCH INTO THE SOUTHERN NAPA AREAS TONIGHT, SOUTH OF THE YOUNTVILLE HILLS. SCATTERED HIGH CLOUDS WILL BE SEEN IN OTHER AREAS. SCATTERED HIGH CLOUDS WILL CONTINUE OVER THE VALLEY ON TUESDAY.

.
THE MODERATE WEATHER THAT HAS EXISTED OVER THE WEEKEND AND ON MONDAY WILL CONTINUE THROUGH WEDNESDAY. GRAPE HARVEST WILL CONTINUE WITHOUT DELAY AS NO PRECIPITATION IS IN SIGHT THROUGHOUT THE REMAINDER OF THE MONTH. TEMPERATURES WILL BEGIN TO WARM 2 TO 3 DEGREES ABOVE NORMAL TOWARD THE END OF THE WEEK UNDER MOSTLY SUNNY SKIES.

.

	NORTH (North of St. Helena)	NORTH-CENTRAL (St. Helena-Yountville Hills)	SOUTH-CENTRAL (Yountville-Napa)	SOUTH (Carneros Region)
LOWS TONIGHT	48-53	49-54	46-51	51-55
HIGHS TUESDAY	82-87	81-86	80-85	74-79
HIGHS WEDNESDAY	83-88	82-87	80-85	76-82

.
WINDS IN THE CARNEROS REGION WILL BE W-SW AT 3-8 MPH TONIGHT AND 5-10 MPH ON TUESDAY. NORTH OF NAPA TO CALISTOGA THE WINDS WILL BE NEAR CALM TONIGHT AND SE-ESE AT 5-10 MPH TUESDAY AFTERNOON.

.
THE NAPA VALLEY DEW POINTS ARE CURRENTLY IN THE MID TO UPPER 50'S. THEY WILL BE IN THE LOW TO MID 40'S OVERNIGHT AND WILL RETURN TO THE UPPER 50'S BY TOMORROW AFTERNOON.

.
THE OUTLOOK FOR THURSDAY-SATURDAY:
EXCEPT FOR SOME SCATTERED HIGH CLOUDS MOVING OVER THE AREA DURING THE PERIOD SKIES WILL BE MOSTLY SUNNY WITH HIGHS 2 TO 3 DEGREES ABOVE NORMAL. HIGHS WILL BE IN THE UPPER 70'S TO MID 80'S IN THE CARNEROS REGION TO THE MID 80'S TO LOW 90'S IN THE CENTRAL AND NORTHERN END OF THE VALLEY.

.
THE NWS 6 TO 10 DAY OUTLOOK FOR THE PERIOD FROM AUGUST 30 TO SEPT. 3 CALLS FOR NO PRECIPITATION AND NEAR NORMAL TEMPERATURES. NORMALS FOR THIS PERIOD ARE NAPA: HIGH 83, LOW 53, AND .01 IN. OF PRECIPITATION, WHILE SAINT HELENA NORMALS ARE: HIGH 89, LOW 51, AND .01 IN. OF PRECIPITATION.

.
THE MAX/MINS FOR YESTERDAY WERE:
RUTHERFORD 85/54
YOUNTVILLE 81/48
CARNEROS 76/54

.
SCHUKRAFT

dew index for the season up until that date (6.75, for instance). Add one to that number (*e.g.*, 6.75 + 1.00 = 7.75). With this information, the daily powdery mildew index values can be monitored from Nowcasting's data to determine when the seasonal accumulation has reached 7.75, which is when the next sulfur dusting may be required.

"The biometeorological aspect of the system also aids in determining an irrigation schedule during the period from bud break to veraison," Hossom added.

"The final primary use is climatological. We need to create a database showing differences in degree summation and wine quality from Carneros to Yountville, Yountville to Rutherford, Rutherford to St. Helena, and St. Helena to Calistoga. The database needs to be based on microclimate—anywhere the climate changes.

"Of course, there was no database for 1986, since the system had just been installed. But I think it's important to develop one. It's sort of a chicken-or-the-egg complex; you don't know what you can use this database for until it's been developed over several years, yet you develop it because you believe there will be uses for it."

Michael Neal, viticulturist and vineyard manager of Napa Valley Vineyard Company, commented, "We used the Nowcasting weather forecasting and weather station network during the 1986 growing season to help predict rainfall or other abrupt weather changes, in order to react for our clients to new or adverse conditions. The two most important seasons for us are frost and harvest. During the frost season, Nowcasting provided us with important specifics such as dewpoints in various areas, predicted winds, expected overnight temperatures in the various microclimates (for instance, Yountville might be 2–4°F warmer than Carneros, and Rutherford could be that much warmer than Yountville), and whether or not clouds or a fog layer might come in at, say, 2:00 or 4:00 a.m.

"Throughout the growing season, we used the reference evapotranspirations to make irrigation decisions. We have neutron probes in many of our vineyards, but the Nowcasting system increases our accuracy."

Evapotranspiration (ET) is the total water loss from a soil by being drawn up through plant tissue and evaporated from leaf surfaces and soil surfaces. Reference evapotranspiration (ETo) provides a reference value that is used to compute the actual ET taking place, thus aiding irrigation scheduling. "Irrigation schedules include timing and amount of water to maintain a plant's viability," Neal points out. "We have neutron probes in many of our vineyards, whether they have drip or sprinkler irrigation systems.

"We're quite happy with the overall system," Neal concluded. "It's really helped us to react better and faster for our clients."

Eventually, the network of automatic weather stations in the Napa Valley should extend from Carneros, in the south, to Calistoga, in the north. Strategic placement of weather stations (on the east and west sides of the valley floor, for instance) will provide a database of the Napa Valley's mesoclimates. The database may also assist in defining appellations within the valley. A similar network could easily be installed in Sonoma, Mendocino, and other grapegrowing regions in the north coastal area.

For more information on subscribing to the weather information network, or for having a station installed in your vineyard, write or call Nowcasting, 101 Salem Street, Suite 4, Chico, CA 95928, (916) 893-0308.

continued from p. 42

limited areas and then extensively in 1983 and 1984. "In 1986," says Frisinger, "we used it only in limited areas for prevention, around delicate instrumentation such as microloggers. In 1983 and 1984 we applied 4 oz/acre at 21-day intervals three times/season. In 1985 and 1986, this program failed to prevent infection. We never alternated sulfur with Bayleton.

"We used wettable sulfur and Bayleton in 400 gallons of water for eradication and found this successful. Our sulfur program consists of dusting at six inches and every 7–10 days thereafter until 10–12°Brix. In 1987, we will use Bayleton for control in areas where mildew appears, and we are interested in some of the new products that are due to be available in 1987.

Monterey County

Larry Bettiga of the UC Cooperative Extension in Monterey County, CA, feels that early bud break and cool weather caused 1986 to be the most severe mildew year that he has seen in a long time. "There probably was an established infection by the time most growers made their first application," says Bettiga. "There was a very dramatic, unprecedented switch from sulfur to Bayleton in 1982. Growers are now incorporating sulfur back into their programs.

"I believe that Bayleton is a good preventative. I recommend that growers start early in 1987, tighten up the interval for Bayleton to 17 days and consider switching to sulfur dusting as the canopy closes. First, though, check with the wineries as to whether there is any objection to late sulfur application. I feel that there are mildew strains that have reduced sensitivity to Bayleton, and this explains grower complaints that 'it just doesn't work the way it used to'."

Rich Smith of Valley Farm Management, Monterey County, CA, switched from sulfur to Bayleton in 1982. His programs from 1982–1985 consisted of monitoring until pre-bloom, then making two or three applications of 2–4 oz of Bayleton every 14–21 days depending on the variety and location. Four- or five-oz applications in trouble spots provided 100% control when mildew was discovered.

In 1985, this program was unsuccessful in some situations. Smith suspects that insufficient coverage may have been part of the problem, but also feels that the 21-day interval is too long. In 1986, he made four applications (total of 18 oz) but had less success than in previous years. This was attributed to extremely high mildew pressure throughout the entire season. "We lost one block of Cabernet," says Smith, "because the first application was delayed too long. In 1987, we will primarily use sulfur as a preventative. We will combine with Bayleton and/or new sterol-inhibiting fungicides on some varieties. We will use the sterol-inhibiting fungicides to control existing infections, if necessary."

Mildew Resistance to Bayleton?

Since many of the viticulturists interviewed cited mildew resistance to Bayleton as a possible explanation for increased infection in 1985 and 1986, Doug Gubler, UC Davis Plant Pathologist, was questioned about experiments he has conducted on this problem.

Gubler is working with 41 mildew isolates. Most have been found on *Vitis vinifera* in California, but a few have been found on *V. californicum* and wild grapes in New York. Carignane is the host for all of his experiments.

Gubler is trying to answer several questions: 1) What are the E.D. (effective dose) 95 levels, or the minimum amount of Bayleton necessary to prevent mildew colonization of 95% of individual leaves? 2) What effect does leaf age have on these levels? 3) What is the maximum spray interval allowable to prevent infection? 4) How effective is Bayleton as an eradicant?

A side development of experiments related to the first objective is that Gubler has observed evidence of developing resistance in some of the isolates, which he refers to as 'differential susceptibility'. The E.D.95 levels vary from 0.25 oz to 1 oz depending on the isolate.

Experiments on newly-expanded leaves show that it may take three times as much material to prevent infection as on medium-age leaves. The isolates that seem to have developed resistance were found in Napa, Fresno and Santa Barbara

VILTER OWNERS

Order your compressor parts from PRP and you'll save. Plus you'll receive 12/18 month guaranteed top quality PRP manufactured parts.

Call 415-887-4105
Overnight delivery available

POWER REFRIGERATION PARTS CO.

3466 Arden Road, Hayward, CA 94545

NEW! Suspended Dump Hopper

FROM Demoisy

WITH BUILT-IN SCALE

This new, innovative Demoisy load cell suspended grape dump hopper allows both dumping and weighing in the same operation! Saves hours of unhooking and rehooking gondolas for weighing and dumping, as well as eliminating truck scale investment.

Prior to dumping a container of grapes, the crusher's auger gate is closed, the recording controller set to zero, and the grapes dumped into the load cell suspended hopper. Net grape weight is determined immediately from scale print-out; the gate is opened, and production continues!

Strain gauge load cells are long-lived and highly accurate.

Hoppers available in four, eight, 12, 16, and 20 ton capacities.

Call today for further information.

PEI PROCESS ENGINEERS, INC.

(415) 78[illegible] 2

3329 Baumberg Avenue [illegible] CA 945[illegible]

counties. It is unknown what the initial sensitivity of the organism to Bayleton was, because base lines were never established prior to initial release of the material.

Maximum intervals found by Gubler to be allowable are 2- to 4-oz/acre every 17 days or 6- to 8-oz/acre every 19 days. Experiments to determine eradicant effectiveness have shown that colonization of inoculated leaves occurred three to four days after inoculation. Therefore, if you make a 4-oz/acre application and wait 21 days to spray again, you have allowed a 4-day infection period to occur.

"Resistance is not the only cause of the difficulties that growers have had these past two seasons," stresses Gubler. "Early application is mandatory for success, since the material has been shown to be a poor eradicant, and many growers just started too late. A low rate used frequently will do a fine job of prevention. However, there are areas where resistance (reduced sensitivity) is developing, and even early and consistent programs may not be sufficient to prevent infection."

A new piece of the mildew control puzzle has recently been added in New York. Experiments there have shown that cleistothecia can overwinter and cause infection the following spring. Cleistothecia found in California were among those that tested positively. Therefore, Gubler thinks a dormant spray should be effective in reducing the incidence of powdery mildew in the spring.

Bayleton Manufacturer Recommendations

Mobay Chemical Corporation, manufacturers of Bayleton, feel that the differential sensitivity observed by Dr. Gubler is not surprising, but merely reflects the variations that are already present in natural fungi populations, even before they are exposed to a given chemical.

The manufacturer does not believe resistance is the proper term to apply to this phenomena, since Dr. Gubler's data has shown that all the powdery mildew isolates tested can be controlled by Bayleton.

Mobay's recommendations for the 1987 season are as follows:

1) Apply Bayleton very early in the growing season. It's local systemic activity makes it more effective than sulfur in controlling overwintering powdery mildew in buds and vine tissue since sulfur activity is greatly diminshed at temperatures below 68°F.

2) Do not expect immediate control of existing colonies. It takes about eight days after application for Bayleton to completely kill a powdery mildew pustule.

3) On highly susceptible varieties and areas with a history of heavy powdery mildew pressure levels, begin applications between bud break and six inches of new cane growth. Apply Bayleton at rates of 2 to 3-oz of 50% WP/acre at 10 to 14-day intervals. Rates of 4 to 6-oz of 50% WP may be applied at 14 to 17-day intervals.

4) On less susceptible varieties and areas with a history of light powdery mildew levels, begin applications between bud break and 12 inches of new cane growth. Apply Bayleton at the rate of 4-oz of 50% WP at 14 to 21-day intervals. If a grower should see disease developing under this spray program, shorten the interval to 10–14 days and apply rates of 2 to 3-oz of 50% WP.

If a grower uses the maximum legal amount of Bayleton 50% WP allowed per acre (18-oz), he should continue to apply an approved fungicide for continued control. Do not leave the grapes unprotected.

Other Sterol Inhibitors

On the horizon for 1988 is "Rally," another sterol inhibitor. There is an experimental use permit for Rally from the Environmental Protection Agency for 1987. In 1986, grape growers in California, Michigan, North Carolina, New York and Pennsylvania conducted tests with the product. It has been tested in France since 1983.

A fail-safe management program in California would include four applications of 4-oz at 21-day intervals. Many of the growers interviewed by *PW* expressed an interest in replacing Bayleton in alternate years with other sterol inhibitors as they become available.

It is hoped that this type of program will prevent any possible resistance from developing, and ensure that the fungus will be kept under control in California and in other vineyards in the U.S.

BARREL BUILDERS

Exclusive Representative For

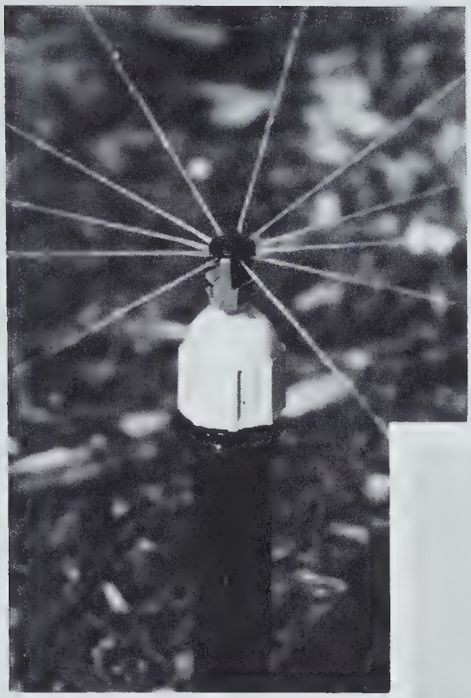
BOUTES & CIE.
FÛT FRANCAIS
Narbonne, France
Bordeaux style
Six galvanized hoops
Bois de centre

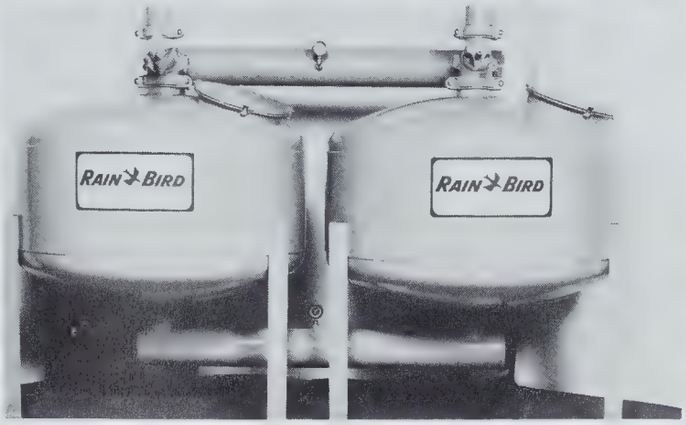
Kentucky Cooperage Company, Inc.
AMERICAN OAK BARRELS
Lebanon, Kentucky
52 gallon capacity
Eight galvanized hoops
American White Oak

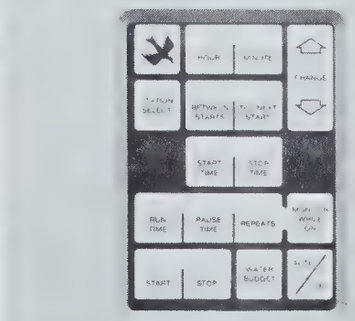
• WE SPECIALIZE IN QUALITY BARREL SHAVING & RETOASTING
• EXPERT BARREL REPAIR SERVICE & MAINTENANCE PLAN
• USED COOPERAGE BROKERS • TANK ASSEMBLY

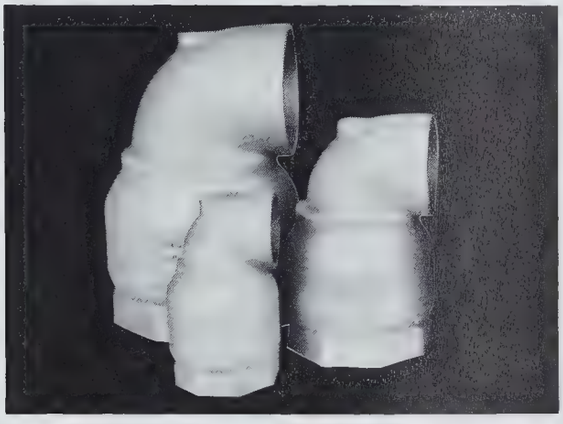
YOUR COMPLETE FULL SERVICE COOPERAGE
1085 LODI LANE, ST. HELENA, CA 94574 (707) 963-7914

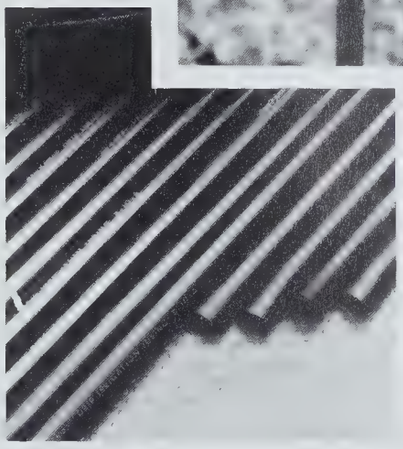
THE LOGICAL CHOICE











MAKE IT TODAY!

Rain Bird the "Total System"

RAIN BIRD®

Rain Bird offers complete drip system packages, with a warranty you CAN rely on!

Rain Bird Sales, Inc. Agri-Products Division
145 N. Grand Avenue, Glendora, CA 91740 USA, (818) 963-9311

WHAT'S AVAILABLE IN PUMPS

Nature produced the first pump, and the design has not changed in millions of years. The heart is an efficient machine, pumping 24 hours a day and, in the case of humans, generally running continuously for 60–80 years with comparatively little maintenance.

Unlike nature, man has been designing and redesigning pumping equipment through the years so that today there is a wide range of pumps available to handle the many applications required in winemaking.

Positive displacement, centrifugal, air-driven diaphragm, and piston pumps offer the winemaker a choice for meeting both sanitation and transfer needs.

Like the heart, the pump is a relatively simple machine, capable of a long life and requiring little maintenance. However, just as the heart benefits from regular routine care, lasting longer and performing better, so does the winery pump.

Routine Pump Maintenance

The most common pump maintenance problem is with the shaft seals, located where the drive shaft comes through the back cover or gear case into the liquid side of the pump. It is good maintenance practice to keep at least one set of seal components ('O' rings) on hand at all times, to avoid lost product and downtime. It is poor practice to run any pump dry, as the seals do require some liquid to keep them cool.

If unusual bearing or rotor noises develop in a pump, an authorized factory service representative should be contacted for corrective maintenance.

For optimum operation of a centrifugal pump, keep the suction or intake hose at a minimum length. Try to keep the discharge hose as short as possible or use the next size larger diameter to reduce friction loss which can reduce flow rate. Insufficient in-flow can cause cavitation and harm white wines.

With flexible impeller pumps, try to prevent a pump from operating more than thirty seconds without liquid. If using a design with stainless steel sleeves, make sure the motor shaft is greased before mounting the impeller.

For gear cases, use the manufacturers' recommended oil rather than using anything that is handy.

On mechanical variable-speed drives, the pulley sheaves should be checked for worn plastic liners. Make sure that the variable belts are the same size as the original equipment.

Electronic controllers should be in moisture-resistant enclosures. Corrosion inhibitors can be added to help resist moisture. Insist on fuse protectors to prevent damage to circuit boards.

The time-tested policy is to take good care of the pump. Keep the seals fresh, the bearings lubed, and all moving parts free of tartar buildup.

Purchasing a Pump with Maintenance in Mind

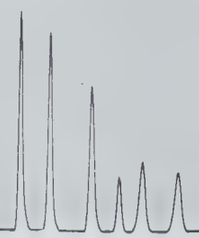
Many wineries rely on a variety of pumps designed to handle different needs. A winery might own as many as 3 or 4 different types of pumps, in different sizes.

The type of pump to be purchased will depend primarily on its application(s). For instance, centrifugal pumps allow for rapid movement of large quantities of liquid and are frequently used in the transfer of wine from tank to tank. Positive displacement pumps with controlled on/off ability lend themselves to barrel, filtration, and bottling operations.

Criteria to consider when making a purchasing decision include gallons/minute, inlet and outlet size, head (discharge pressure), horsepower, variability and/or simplicity of controls, portability, parts availability and maintenance requirements. Pump manufacturers and distributors are ready and willing to discuss maintenance procedures with prospective buyers. Always request the appropriate manual for the particular model purchased.

ETS

1204 Church Street
St. Helena
California, 94574
(707) 963-4806

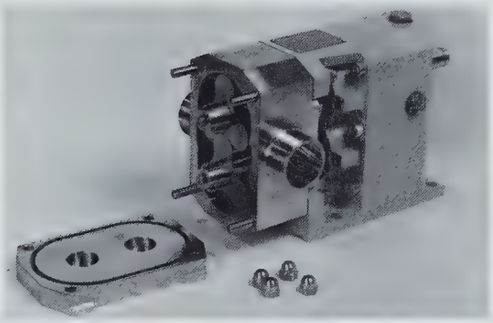


REGULATORY AND EXPORT ANALYSIS

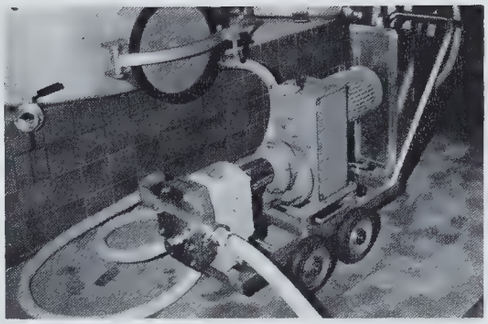
Ethyl Carbamate (Urethane)	GC/MS	E.E.C. V.I.1 Export Analysis
Diethylene Glycol	GC + GC/MS	Japanese Export Analysis
Methanol	GC	State & Provincial Requirements
Histamine	HPLC	Nutritional Statements
Sodium Azide	HPLC	Caloric Content

Strict quality control and high sample capacity assure reliable results with prompt turnaround. Capabilities including liquid chromatography (HPLC), gas chromatography (GC) and gas chromatography/mass spectrometry (GC/MS) meet the most complex analytical requirements.

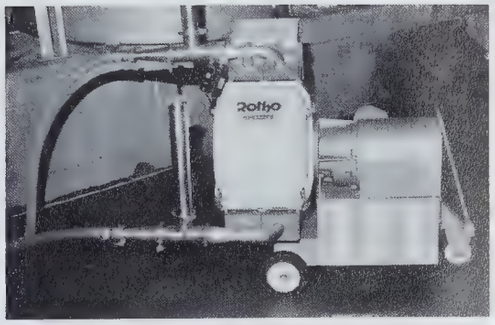
-- B.A.T.F. Certified Laboratory (Procedures 73-6 and 86-1) --



Albin sanitary lobe positive displacement pump with head removed.



Crepaco rotary positive displacement pump in service at Pine Ridge Winery, Napa, CA is available from Burkhart Industrial Sales.



Ragazzini peristaltic pump in service at Lakespring Winery, Napa, CA is available from The Compleat Winemaker.

For assistance in determining your pump needs, *PW* has compiled the following list of suppliers. When contacting them, please mention having seen their information in *PW*. Readers may also want to refer to "Selecting a Pump, Designs and Options" (*PW* May/June 1984) for additional material.

Albin Pump, Inc.

Since 1899, Albin Pump, Inc., has manufactured sanitary lobe positive displacement pumps for wineries throughout Europe. Albin pumps are now available in North America. The pumps are used for high capacity transfer of must and wine and are also suitable for metering applications.

Advantages of the Albin design are its ability to self-prime and run dry without damage. All pump sizes are available with a choice of mechanical, 'O' ring, or gland-packing shaft seals. Rotors are available with two or three lobes in 316 s/s, bronze, or buna-N rubber. A complete service manual is supplied with each pump.

Pumps are available in the following sizes: 21 gpm maximum capacity at maximum rpm with 1-inch connections, 33 gpm max. capacity with 1-inch connections, 48 gpm max. capacity with 1 ½-inch connections, 70 gpm max. capacity with 1 ½-inch connections, 97 gpm max. capacity with 2-inch connections, 170 gpm max. capacity with 2 ½-inch connections, 222 gpm max. capacity with 3-inch connections, 504 gpm max. capacity with 4-inch connections, and 720 gpm max. capacity with 6-inch connections.

Inquiries to: Albin Pump Co., 120 Interstate North Parkway East, Suite 208, Atlanta, GA 30339, (404) 980-0366 OR Simonds Machinery Co., 304 Industrial Way, Brisbane, CA 94005 (415) 468-4830.

SEE OUR AD PAGE 39

Burkhart Industrial Sales

Centrifugal and rotary positive displacement pumps made by Crepaco and flexible impeller pumps made by Jabsco are available from Burkhart Industrial Sales. Also available are electric motors, variable speed drives, gear motors, electronic motor controllers (AC and DC), electric motor starters, chain and sprockets, pulleys and belts, pumps, repair, and service.

Crepaco centrifugal pumps suitable for winery use are the following sizes: model-#6 with a 1 ½-hp motor at 1800 rpm and a capacity up to 150 gpm; model-#8 with a 5-hp motor at 1800 rpm and a capacity up to 220 gpm; and the model-#8 Special with a 7 ½-hp motor at 1800 rpm and a capacity up to 400 gpm.

Crepaco rotary positive displacement pumps for winery application are the following sizes: model-#3 with a 2-hp motor (580 rpm) and a max. capacity up to 32 gpm; model-#4 with a 3-hp motor (425 rpm) and a capacity up to 60 gpm; and model-#6 with a 5-hp motor (510 rpm) and a capacity up to 120 gpm. Rotors for these pumps can be ordered with different degrees of looseness depending on the product to be pumped and the temperature at which the pump will be cleaned.

Jabsco pumps are available in the following sizes: 1-inch connections with a capacity up to 12 gpm and 1 ½-inch connections with a capacity up to 54 gpm. Both sizes are mounted directly onto motors and are reversible.

Inquiries to: Burkhart Industrial Sales, 3654 West Dry Creek Rd, Healdsburg, CA 95448 (707) 433-3265.

SEE OUR AD PAGE 14

The Compleat Winemaker

Many types of pumps are available, including Jabsco flexible impeller, Ladish rotary lobe, Wilden air diaphragm, Grover air piston, piston pumps by Nicolini and Ragazzini, and centrifugal pumps by Ladish, Bell & Gossett, and G & H. Pumps can be outfitted to the user's exact requirements for the cart, controls, electrical requirements, and fittings.

The most popular pump sold by The Compleat Winemaker is the Jabsco flexible impeller with stainless steel body mounted on a stainless steel cart with variable speed control from 0 to 100% capacity both at the pump and with a remote-control cable. There are two sizes: 25 gpm and 50 gpm.

The Compleat Winemaker has introduced two new types of positive displacement pumps in the past few years. One is the Ragazzini peristaltic pump, which has many features. Chief among them is ease of cleaning—as simple as a hose, for the pumping element is a heavy wall tube. The pump can handle solids, including abrasives. It can be run dry and can pump against a constant back pressure of 75 psi. There are no seals and no hidden liquid traps in this pump.

Ragazzini peristaltic pumps are supplied with closed manifolds and with forced feed hoppers for must and pomace. There are four sizes available: 35 gpm, 70 gpm, 140 gpm, and 280 gpm.

There are two minor disadvantages: the pumps are physically large and the flow is pulsating. The pulsating flow is minimized with air-dampening chambers. Main uses for this pump are transfer of must, pomace, wines and lees. Because it is a very gentle pump, it does not strip CO_2 from young wines.

The second new pump is the Nicolini elliptical piston pump, which is an open-throat, auger-fed pump for whole grape clusters, must and pomace. Three sizes are available with capacities of 10, 20, or 40 tons/hour of must. The contact parts are stainless steel except for the phosphur-bronze flapper valve that rides on the elliptical piston. The discharge of the pump is provided with a large radius 135° sweep elbow to a 4-inch fitting. The pump operates at about 60 rpm and is very quiet.

User references for these two pumps and for all pumps offered will be supplied on request.

Inquiries to: The Compleat Winemaker, 1219 Main St., St. Helena, CA 94574, (707) 963-9681.

SEE OUR AD PAGE 32

CLASSIFIED ADS

ESTATE BOTTLING
Portable Wine Bottling At Your Winery
Owner Operated—Quality Service—Sterile Bottling
2-label Capacity—1500 cs/day—Generator on truck
Contact: PO Box 338, Rutherford, CA 94573 (707) 963-5705

Mearelli 1600-litre press with stainless steel basket and juice pan. Hydraulic controls and American electric motor. Used two seasons and fully re-conditioned. $6,500. Please contact: Tom Cottrell, Chalk Hill Winery, 10300 Chalk Hill Rd., Healdsburg, CA 95448 (707) 838-7306.

WINERY and VINEYARD FOR SALE
6-acre vinifera vineyard and 5,000 sq.ft. Virginia farm winery located on 25 acres. Vineyard planted in 1978. Winery with apartment on 3rd level built in 1984. Located 20 miles west of Charlottesville, VA in Blue Ridge Mountains near Afton. Write for brochure: Bacchanal Vineyards, 10200 Hobby Hill Rd., Richmond, VA 23235

MORTL Field Stemmer/Crusher
Amos Crusher and integrally mounted must pump, 1,000-gal S/S tank, chain-drive.
Asking $8,000 FOB Healdsburg, CA.
Contact: Bill Wheeler (707) 433-8786

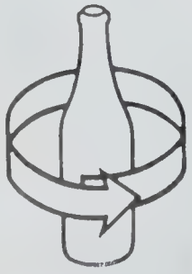
NEEDED
Two positions available for winemaker and viticulturist in Virginia. Please send resume to Oasis Vineyard, Rt. 1, Hume, VA 22639 or CALL 703-635-7627

POSITION AVAILABLE
Winemaker for Oregon Winery
Responsibilities include winemaking, operations management, and marketing for 4,000-case winery.
Veritas Vineyard
31190 NE Veritas Ln, Newberg, OR 97132 (503) 538-1470

WINERY/VINEYARD For Sale by Owner
Defiance, MO on scenic Hwy 94—excellent location. Vineyard, five-years-old, has 5-acres: Delaware and 5-acres: Vidal 256. 225 additional acres for vineyard. 50 acres total with county water. Additional home included on property. Total Price: $477,500.00
Contact Willie (314) 987-2275

WINEMAKER for ESTABLISHED VIRGINIA WINERY
Excellent opportunity to advance in responsibility over all winemaking operations, and participate in marketing. Send resume outlining education, experience, and public speaking skills to: PRACTICAL WINERY, Box V, 15 Grande Paseo, San Rafael, CA 94903.

WINE BOTTLES BOUGHT & SOLD
GLASS STERILIZATION
NEW CARTONS & DIVIDERS



ENCORE!

(415) 234-5670

860 So. 19th Street, Richmond, CA 94804

Criveller Company

Enopompe piston pumps are available from the Criveller Company which are self-priming, have reversable flow, a two-speed motor, and a pressure safety switch. The pumps are suitable for pumping juice, wine, crushed destemmed grapes, lees, concentrate, and liquid sugar, etc. The pumps can be made of all stainless steel or with a body of acid-proof phosphorous bronze and s/s parts that are in contact with liquid.

The following sizes are available: model #50, 1320 gph, 1-speed; model #85, 2240 gph and 1120 gph; model #85MX, (all s/s) 2240 gph and 1120 gph; model #120MX (all s/s) 3170 gph and 1585 gph; model #130, 3430 gph and 1715 gph; model #220MX (all s/s) 5810 gph and 2905 gph; model #250, 6600 gph and 3300 gph; model #350, 9240 gph and 4620 gph; model #360MX (all s/s) 9500 gph and 4750 gph; model #500, 13,200 gph and 6,600 gph; and model #700, 18,490 gph and 9245 gph.

Inquiries to: Criveller Company: USA: P.O. Box 162, Lewiston, NY 14092; Canada: 6863 Lundy's Lane, Niagara Falls, Ontario, L2G 1V7, (416) 357-2930.

SEE OUR ADS PAGE 34 + 40

Key Industrial Associates

Tri-Clover rotary positive displacement pumps are available in various sizes with options suited for use in the wine industry. With proper care and a routine maintenance program, a Tri-Clover positive displacement pump can give many years of trouble-free service.

Tri-Clover offers different sizes of pumps dependent on the desired flow rate requirements. Most commonly, three sizes are now being utilized: Model PR-25 (28 gpm max) with 1 ½-inch connections; Model PR-60 (60 gpm max) with 2-inch connections; and Model PR-125 (120 gpm) with 2 ½-inch or 3-inch connections.

For the majority of wine-pumping applications, the use of a four-lobe Buna-N rubber rotor should be used. Tri-Clover rubber rotors are easily replaceable and repairable. Metal rotors are available if desired.

The simple sanitary seal design requires periodic inspection and change of two shaft static 'O' rings and two pump body 'O' rings. Changing of the two seal rings and two wear rings is required if leakage is noted after an '0' ring change. These periodic changes are inexpensive and can be done in a matter of five to ten minutes.

Also available as an option is a pressure-relief cover which provides the cellar worker a simple means of protection of lines and equipment. The cover is of a piston design with no pockets or 'dead' areas to retain and contaminate product. Units can be manually adjusted between two ranges, 15 to 50 psi and 50 to 100 psi.

Lubrication of the bearings should be performed every 100 hours with Mobil Temp #1 grease. Oil should be changed every 200 hours using SAE20 motor oil. Periodic inspection of oil level and cleanout of grease should be practiced.

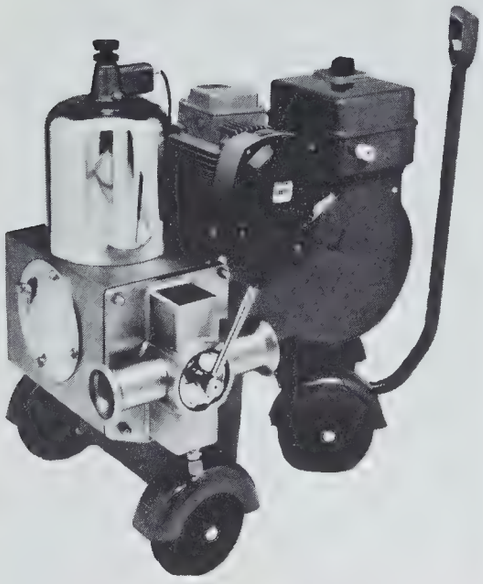
A service manual is supplied for quick review and reference. Please write for catalog PR for complete specifications.

A complete line of Tri-Clover sanitary centrifugal pumps is available for use in the wine industry. Two different mounting styles are utilized.

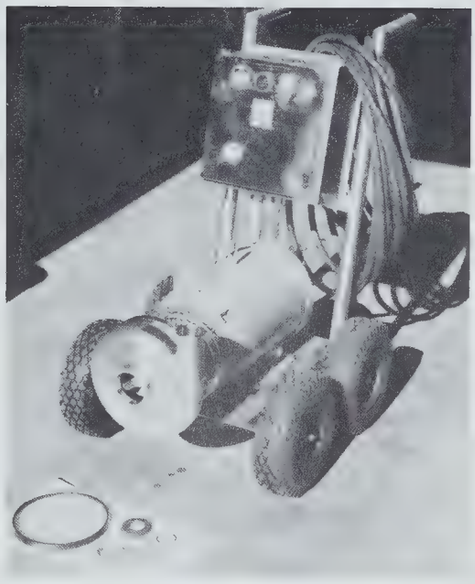
The 'C' series, which direct-mounts to a 'C' face foot-mounted TC frame-type motor, is most common. The pump shaft, seal, and impeller are positive-driven off the motor shaft. This design is very compact and is normally utilized for portable cart-type mounting.

The 'SP' series is a base-mounted design, separate from the motor. It is normally used in fixed in-place installations.

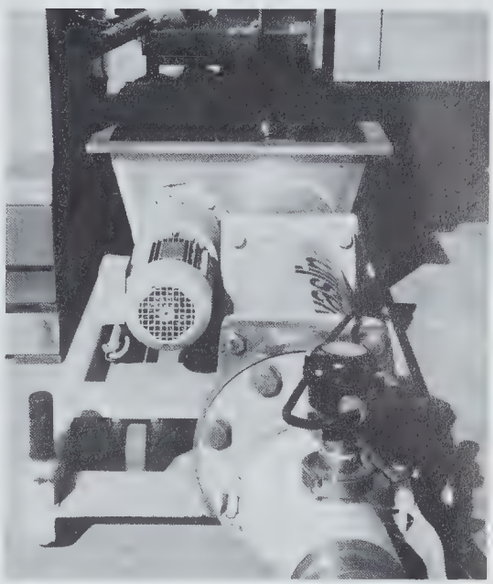
Both series of pumps can be operated at speeds up to 3500



Enopompe piston pump availabe from the Criveller Company.



Tri-Clover centrifugal pump and replacement parts are available from Key Industrial Associates.



Progessive cavity pump, model VM 15/30, at DeLormier Winery, Healdsburg, CA is available from KLR Machines, Inc.

rpm. The 1750-rpm motor is most widely used where less shear is a factor.

At the 1750-rpm speed, various flow rates can be obtained by use of the following pump sizes: model-C114, 50 gpm capacity; model-C216, 100 gpm capacity; model-C218, 180 gpm capacity; model-C328, 250 gpm capacity; and model-C4410, 1000 gpm capacity. As a rule, the greater the discharge pressure and flow rate required, the greater the horsepower requirement.

The sanitary 'D'-type external balanced seal design is best suited for most wine-pumping applications. A single 'O' ring and carbon seal, driven on the shaft against a stainless steel backplate, is employed. Periodic inspection and change of the 'O' ring and carbon can be done in as little as five minutes.

Supplied with each new pump is a complete service manual for review and reference. Please write for catalog TF for complete specifications.

Inquiries to: Key Industrial Associates, 997 Enterprise Way, Napa, CA 94558 (707) 252-0312.

SEE OUR AD PAGE 30

KLR Machines, Inc.

Elliptical rotor pumps for transfer of must and pomace made by Vaslin are available from KLR Machines, Inc. There are two models: PM 200 (20 tph max) and PM 500 (30 tph max). There are two moyno-style eccentric worm (progressive cavity) pumps made by Vaslin: model VM 15/30 (30 tph max.) and model VM 60 (60 tph max). All four units can be furnished with stainless steel hopper and feed screw.

For gentle liquid transfer, Vaslin makes moyno-style progressive cavity pumps with two-speed motors: model 60 (800 and 1600 gph); and the model 130 (1700 and 3400 gph). In addition, Vaslin has a wide range of more standard centrifugal wine and juice transfer pumps.

Inquiries to: KLR Machines, Inc., 1925-B Francisco Blvd. East, San Rafael, CA 94901 (415) 456-4774; 47 W. Steuben St., Bath, NY 14810, (607) 776-4193.

SEE OUR AD PAGE 10

Krogh Pump Company

Krogh Pump Company has installed pumps in California wineries for many years, and offers over 100 years of experience to help solve pumping problems. The most widely-used pump is the close-coupled version of the Series 1000 centrifugal pump. These pumps are the Krogh standard end-suction pumps with the pump impeller mounted on the extended motor shaft. Basic construction materials include 316 s/s, cast iron, and heat-treated nickel iron. This line of pumps is also available as frame-mounted units with flows to 14,000 gpm.

Two sizes are most commonly found in wine transfer for cart-mounted close-coupled pumps. The smaller size is a 2x3x12 Series 1050. This pump is rated up to 250 gpm. The larger size is a 4x5x12 Series 1050 rated to 900 gpm. These pumps are nor-

SEGUIN MOREAU

Tonnellerie
(COOPERAGE)

ADMINISTRATIVE SERVICES OFFICE
2180 Jefferson Street, Suite 208 — Napa, California 94559
(707) 252-3408

mally provided in 316 s/s construction. Both open and enclosed impellers are available. Either packed stuffing boxes or mechanical seals from various manufacturers are available. Other Series 1050 pumps are available with flows to 3,000 gpm.

Krogh can provide the basic pump, or customize to specific requirements, and they can be mounted on heavy-duty carts. Motor starters and controls can be included and mounted on the cart. Cables and plugs to match winery electrical systems are also available.

Krogh Pump Company has provided centrifugal pumps to wineries for over 20 years. There are many Krogh stationary frame-mounted centrifugal must pumps in service. These pumps utilize open and non-clog impellers with heavy-duty bearing housings, shafting, and bearing. Flows available to 4,000 gpm are available.

Other types of pumps available from Krogh Pump for winery use include many sump-type centrifugal pumps. The Series 800 wet-pit sump design utilizes wet ends from many different product lines to customize design to the winery's needs. Open, semi-open, enclosed and non-clog impellers are all available. Materials of construction suitable for the service can be supplied. Krogh can provide sump pumps to depths of 25 feet and more. Also dry-pit-type configurations are available in certain series.

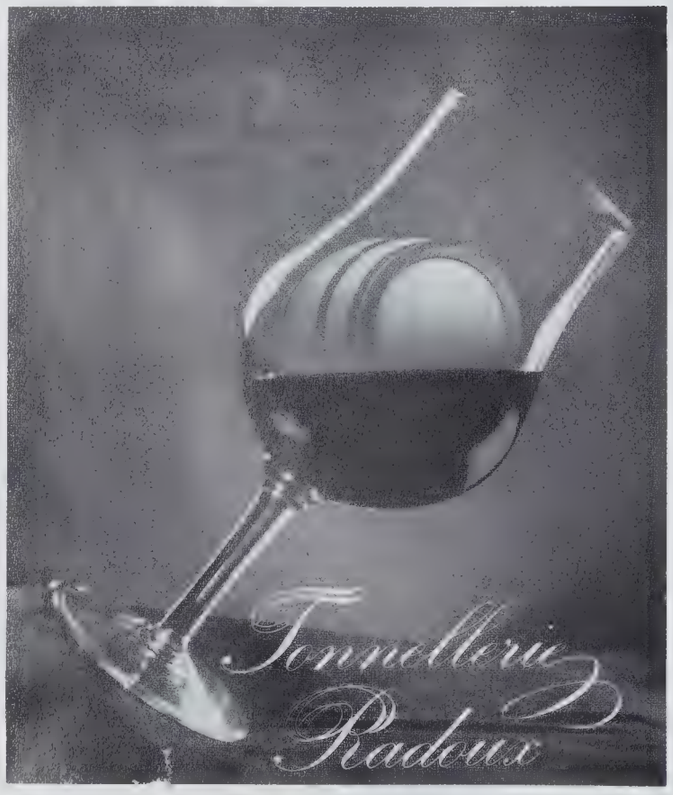
Many Krogh pumps have been in service for years with virtually no maintenance required. The side-plate design which Krogh utilizes is a feature that provides easy maintenance, especially the cart-mounted design. The pump 'wet end' can be worked on without having to disassemble the unit from the motor end, or disturbing the motor, or removing the unit from the cart. The various impeller types afford a winery the ability to change from an open impeller, for example, to an enclosed impeller design with a minimum of parts changeout.

In addition, Krogh stands ready to overhaul customers' pumps and to rebuild them to 'like-new' condition.

Inquiries to: Krogh Pump Company, 515 Harrison St., San Francisco, CA 94105 (415) 986-2100 OR (800) 225-7644.

SEE OUR AD PAGE 19

Un grand plus!



French oak ovals, uprights, and barrels
Agent: Boswell Company
36 Crane Drive, San Anselmo, CA 94960, (415) 457-3955

Process Engineers, Inc.

Waukesha rotary positive displacement pumps, widely used in the wine industry, are available from Process Engineers, Inc. This design has seen service for over 50 years. In winery use, a Waukesha pump should last many years. However, there is one way to ruin a pump of this design quickly: run diatomaceous earth, bentonite or other abrasive material through it.

Typical winery applications for a Waukesha positive displacement pump are operations that involve flow rates (10 to 100 gpm) at elevated discharge pressures. Examples are filtration, bottling, transfer to and from barrels, and transfer of finished wines.

A Waukesha pump can be sterilized with hot water (180–200°F) for 15–20 minutes without damaging the pump. The impellers are made of a special stainless steel 'Alloy 88' material, which has a slower expansion rate than does the type 316 s/s case. Therefore, the case will expand faster than the impellers, preventing seizing of the rotor to the case. Rubber and type 316 s/s rotors do not have this advantage.

Three models in the Waukesha Universal Series are recommended for winery use. The Model-30 (30 gpm max.) is popular for barrel racking and filtration. Some wineries prefer the Model-60 (60 gpm max.) or the Model-130 (130 gpm max.).

In the case of a Waukesha pump, the normal wear parts are one shaft 'O' ring, and one body 'O' ring on each of two shafts, which are inexpensive and easy to replace. Normally, changing the 'O' rings is a 15- to 20-minute job. This involves disassembling the fluid head. While the pump is apart, the shaft sleeve should also be replaced or turned around if wear is evident.

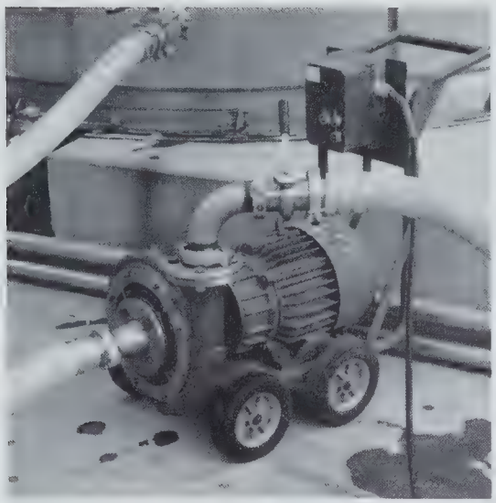
Recommended lubrication for a Waukesha pump is an oil change every 250 hours, or a minimum of once a year or maximum of every three months. Bearings must be greased every 250 hours.

The Waukesha pump is designed to be easily disassembled for cleaning and/or inspection. Clean the pump every day or at the end of a process. Disassemble the fluid head, and remove and clean the 'O' rings, sleeves and pump cover gaskets.

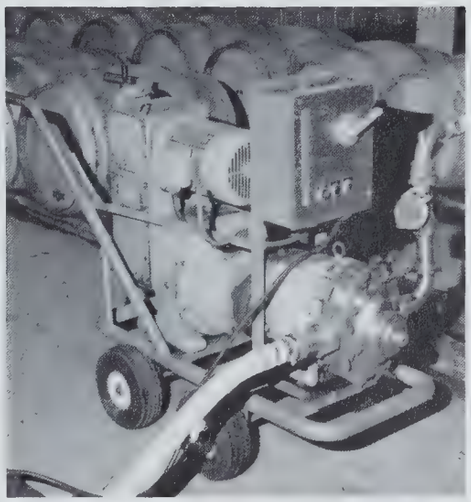
Waukesha provides a comprehensive maintenance manual, including a four-page troubleshooting guide which illustrates how to check many problems.

Centrifugal pumps from the following manufacturers with 1750 rpm motors in their most common sizes for winery use are: L.C. Thomsen with internal sanitary seal, model-4 (50 gpm max.), model-5 (60 gpm max.), model-6 (120 gpm max.), and model-8 (250 gpm max.); Fristam close tolerance sanitary centrifugal pump model FPX-731-3 (100 gpm max.) with cast head and internal seal; Superior Stainless, Inc., centrifugal pumps with external sanitary seals and replacement wear ring in back plate, model SCS-45 (70 gpm max.), model SCS-65 (180 gpm max.), and model SCS-85 (400 gpm max.); G & H centrifugal pumps, model GHC-0/115 (50 gpm max.), model GHC-1/162 (150 gpm), model GHC-2/180 (175 gpm max.), and larger sizes.

Peristaltic (hose) pumps are made by Waukesha in six different sizes with capacities ranging from 1 gpm to 210 gpm. A Waukesha flexible impeller pump model 67 (70 gpm max.) employs individually replaceable vanes in the head. There is a PERA sliding vane pump for must with a 90 tph max. capacity.



Krogh centrifugal pump in service at Beringer Vineyards, St. Helena, CA is available from Krogh Pump Company.



Waukesha rotary positive displacement pump in service at Beaulieu Vineyards, Rutherford, CA is available from Process Engineers, Inc.

OMAC rotary positive displacement pump with head removed showing stainless steel lobes is available from Prospero's Equipment Corp.

Progressive cavity pumps made by Netzsch are available in sizes similar to other positive displacement pumps. These pumps cannot handle hot sterilization temperatures.

Rotary piston pumps made by Demoisy use rotary valves as opposed to ball valves and are used primarily for transfer of must and pomace. The balls have been replaced with the rotor, much like a single rotor in a Waukesha, opening channels to suction and discharge in relation to the position of the piston(s) ascent or descent. The most common sizes for winery use are: model ID7 (7 tph max.), model ID15 (18 tph max.), and model CD30 (30 tph max.). There is also a single-piston model P280 (30 tph max.) and a double-piston model PP280 (60 tph max.).

The Tiemme piston pump is of the standard suction and discharge 'ball' style with fabricated chambers with reversing and a pressure switch for shutoff. It is also available with a variable-speed drive. Nine models are available with maximum flow rates of 57 gpm up to 286 gpm.

Inquiries to: Process Engineers, Inc., 3329 Baumberg Ave., Hayward, CA 94545, (415) 782-5122.

SEE OUR ADS PAGE 13 +47

Prospero's Equipment Corp.

Rotary positive displacement pumps made by OMAC and flexible impeller pumps made by Liverani are available from Prospero's Equipment Corp.

OMAC pumps can be recognized by their distinctive design with two separate bodies: the pump body and the gear box. This configuration insures that in case the mechanical seal of the pump body should fail, wine will not enter the gear box. Also, in case the 'O' ring of the gear box should fail, the oil will not get into the pumping chamber of the pump.

The pump body, lobes and all contact parts are made of 316 s/s. The pumps are variable speed and reversible and can be ordered with a by-pass.

The OMAC pump can be run dry, but this is not recommended for extended periods. Do not run abrasive material such as diatomaceous earth and bentonite through this type of pump.

OMAC pumps are available in light series models with capacities of 16 to 53 gpm and heavy series models with capacities of 106 to 240 gpm.

Cleaning of the OMAC pump is very easy. It is done by unscrewing four knobs to remove the pump head. The seals are easily replaced in a matter of minutes. Recommended maintenance is to clean the pump every day by removing the pump head. Change oil in the gear box every 250 hours or yearly.

Flexible impeller pumps by Liverani can be used for transfer of destemmed grapes or wine. The pumps are reversible, have a rubber impeller (non-toxic) and the pump housing is stainless steel with a mechanical seal 'O' ring. Three sizes are available: Minor, 1 ½hp and 25 gpm and 1-inch connections; Major, 2 ½hp and 80 gpm and 2-inch connections; and the Maxi, 5 ½ hp and 160 gpm and 3-inch connections. The Minor and Major units can be variable-speed.

You make wine; we make labels.
Together, we make a difference.
Fine wine imagery from
BLAKE PRINTERY
Call or write for a brochure
2222 Beebee Street • San Luis
805/543-6843 or toll free in Cali

Inquiries to: Prospero's Equipment Corp., 134 Marble Ave., Pleasantville, NY 10570, (914) 769-6252; 840 Piner Rd. #14, Santa Rosa, CA 95401, (707) 523-2900; 715 Arroyo Ave., San Fernando, CA 91340, (818) 365-4403; 2758 NE Broadway, Portland, OR 97232, (503) 287-2624; 725 Climer St., Muscatine, IO 52761, (319) 263-4410.

SEE OUR AD PAGE 2

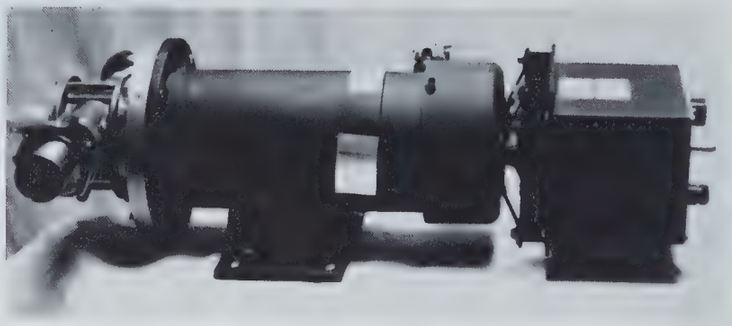
R.L.S. Equipment Co., Inc.

One very popular pump sold by RLS is the Jabsco stainless steel flexible impeller pump with a ¾ hp vari-drive motor and 1-inch diameter connections. There is a speed regulator and the maximum capacity is 26 gpm; the pump flow can be reversed. The pump is self-priming vertical with a dry suction lift of 10-feet. The pump has an easy-to-replace rubber impeller.

Centrifugal pumps made by G & H Products are available in seven models, complete with motors in a sanitary or industrial version. Product contact parts are AISI 316 s/s, and the rotary seal is a replaceable wear-ring. The durable rotary-balanced seal can be flushed or silicone carbide for difficult products.

The G & H pump has a vaned double-curved impeller for gentle, efficient handling of product. The volute case with impeller allows for more volume with less hp demand. A wide range of connections are available: GC clamp, bevel seat, IPS, or flanged. The inlets are larger than the outlets to help flow capacities. The pump can be cleaned without disassembly by accepted CIP techniques.

The G & H centrifugal pump sizes are: model GHC-00 to 75 gpm, model GHC-0 to 120 gpm, model GHC-1 to 300 gpm, model GHC-2 to 400 gpm, model GHC-3 to 800 gpm, model GHC-4 to 325 gpm (1800 rpm only), and model GHC-5 to 600 gpm (1800 rpm only).



Jabsco flexible impeller pump available from R.L.S. Equipment Co., Inc.

Positive displacement pumps made by G & H are available in eight basic models in a sanitary or industrial version. Product contact parts are AISI 316 s/s and the cartridge-design gear case allows simplified maintenance and repairs. Pinned carbon mechanical seals for durability are standard; other seals are optional. There is a wide pressure range in order to select the proper pump for the required application. The pumps have a full range of operating flow from 1 gpm to the maximum of each size. There is a relief valve for pump and equipment safety. Inlet connections are available to suit customer's requirements.

The G & H positive displacement pump sizes are: model GHP 601 to 10 gpm, model GHP 610 to 18 gpm, model GHP 1000 to 37 gpm, model GHP 2000

The Quintessence of Quality

MONDIN

poly-laminated capsules

MONDIN USA INC.
Street · Yountville, CA. 94599
(707) 944-CAPS, 944-2277

QUALITY
Polo PRODUCTS
FOR THE GRAPE & WINE INDUSTRY

GOODYEAR

Rubber and Plastic Wine Hose
Washdown and Steam Hose
Exclusively Carrying a Special 1" Rubber Wine Hose

SANI FIT SANITARY FITTINGS
REOTEMP WINE TANK TEMPERATURE CONTROLS
HYDRAULIC AND PNEUMATIC COMPONENTS

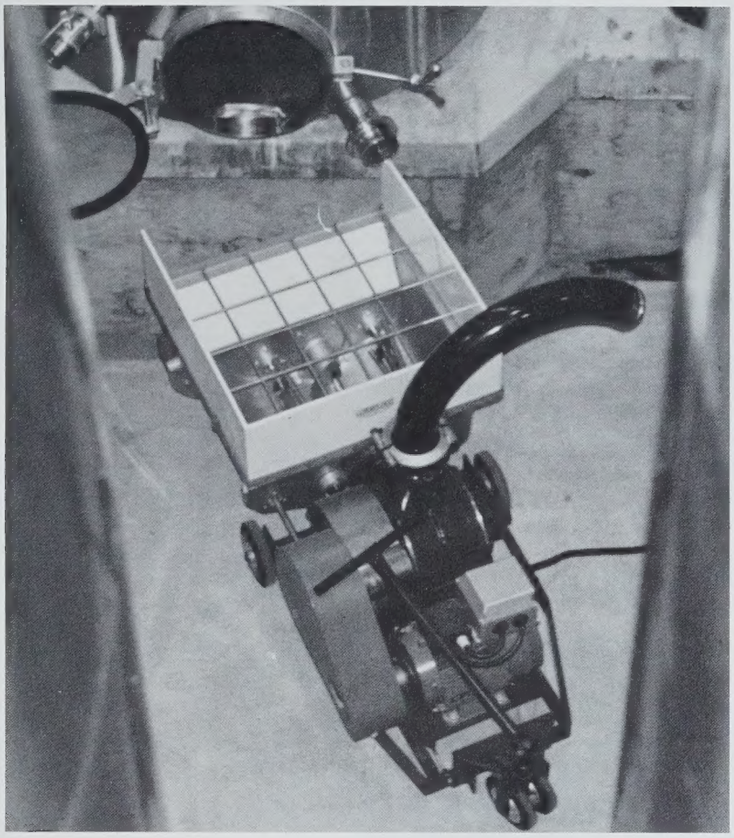
The Santa Rosa Bearing Group

Santa Rosa Hydraulics
520 Barham Ave.
Santa Rosa, CA 95402
(707) 544-5600

Napa Bearing & Industrial Supply Co.
926 Kaiser Rd.
Napa, CA 94558
(707) 252-7333

Ukiah Bearing & Gear Co.
1968 N. State St.
Ukiah, CA 94582
(707) 468-0291

Lakeport Bearing Industrial Supply
96 Soda Bay Rd.
Lakeport, CA 95453
(707) 263-9503



Menestrina pump at Ferrari-Carano Winery, Healdsburg, CA is available from Scott Laboratories, Inc. (photo by M. Weeks)

to 93 gpm, model GHP 2100 to 155 gpm, model GHP 3000 to 395 gpm, and model GHP 3100 to 510 gpm.

Inquiries to: R.L.S Equipment Co., Inc., 1017 White Horse Pike, PO Box 282, Egg Harbor City, NJ 08215, (609) 965-0074 OR 1-800-527-0197.

SEE OUR AD PAGE 37

Scott Laboratories, Inc.

Menestrina receding-vane-style pumps, for transfer of fresh, destemmed or non-destemmed grape must and fermented grape pomace, and Manzini piston pumps are supplied and serviced by Scott Laboratories, Inc. (See *PW* Jan/Feb 1987 for complete Manzini pump information.)

The Menestrina pumps consist of a receiving hopper with a control screw and pomace-centering rotating paddles. The central screw feeds the large, low-rpm receding-vane pump for low solids movement of pomace through a large (up to six inches) discharge opening. Due to the absence of valves, plugging and its resulting interruptions are eliminated. Compact design allows easy movement, and the low-height receiving hopper enables positioning of the unit under fermenter tank doors in most cases.

Three standard models of Menestrina pumps are available: model M-80 with a 10hp motor and maximum capacities of 25 tons/hr for pomace and 48 tons/hr for grape must, model M-60 with a 7.5hp motor and maximum capacities of 19 tons/hr for pomace and 35 tons/hr for grape must, and model M-70 with a 5.5hp motor and maximum capacities of 7 tons/hr for pomace and 12 tons/hr for grape must.

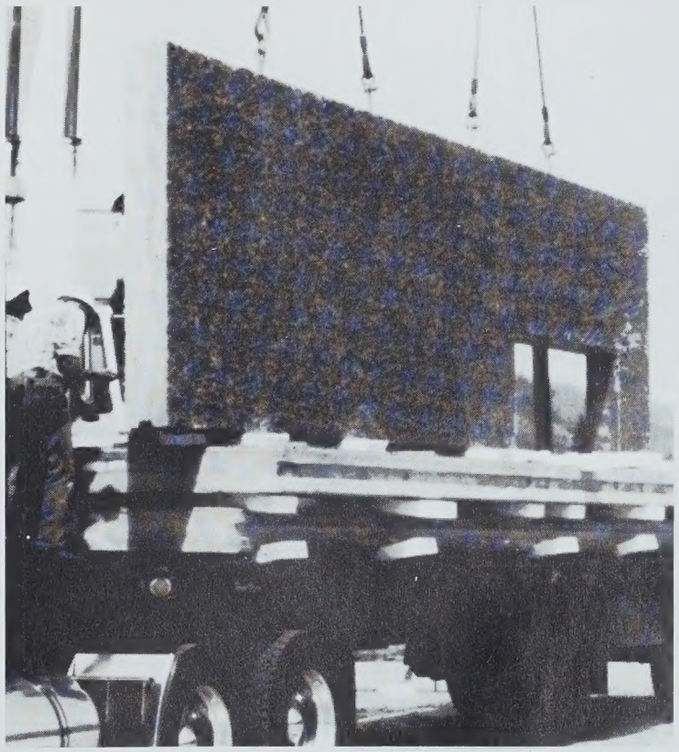
The Menestrina pump is of rugged design as it is used for one of the more difficult pumping tasks in a winery. The pump is protected from damage due to jamming by the use of two exactly positioned and sized shear pins. Suggested maintenance includes lubrication of drive gears, chain, and sprockets weekly or more often during heavy use. All bearings are sealed units.

An annual inspection immediately after a period of heavy use should be performed, and significantly worn parts replaced. Many parts such as drive belts, drive chains, and bearings can be obtained from local industrial suppliers. Scott Laboratories maintains an inventory of all wear parts in San Rafael, CA. Complete parts listing and lubrication recommendations are included with the pump.

Inquiries to: Scott Laboratories, Inc., PO Box 9167, San Rafael, CA 94912, (415) 457-8460 or (800) 821-7254 outside California.

SEE OUR AD PAGE 3

Beat the System



Beucon Building Systems:

1. **Controls temperature and saves energy**
2. **Lowers maintenance costs**
3. **Can be fabricated rapidly**
4. **Is competitively priced**

Our combination of highly insulated concrete walls, all steel mainframe structural supports and long life insulated all steel roofs, makes a hardwall building system that is easy on your pocketbook. The secret is the **BEUCON** process of enveloping insulation right into the concre[illegible]alls.

We have solved building problems [illegible] tries. We can help you beat the systen[illegible]

Call now for a free brochure on how t[illegible] building.

BEUCON BUILDING SYSTEMS
P.O. Box 56 Oakdale, CA 95361 (209) 847-3073

ADVERTISER PRODUCT/SERVICE INDEX

Supplier–Page No.

BARREL BROKER/COOPERAGE SUPPLIES
Barrel Builders–48
Boswell Company–39
Mel Knox–42
Seguin Moreau–53
Tonnellerie Radoux–54

BIRD NETTING
Green Valley Farm–13

BOTTLES (Glass)
ENCORE! (Sterilizing and Sales)–52
Mel Knox (Sales)–42

BOTTLING EQUIPMENT
The Compleat Winemaker–32
Criveller Co.–34 + 34
KLR Machines,Inc.–10
Process Engineers,Inc.–13 + 47
Prospero's Equipment Corp.–2
RLS Equipment Co.,Inc.–37
Scott Laboratories,Inc.–3
SEN Machines,Inc.–6

CAPSULES
KLR Machines,Inc.–10
Ramondin USA Inc.–56
RLS Equipment Co.,Inc.–37
Scott Laboratories,Inc.–3
SEN Machines,Inc.–6

CENTRIFUGES
Centrico,Inc.–60
Process Engineers,Inc.–13 + 47

CHEMICALS
The Compleat Winemaker–32
Criveller Co.–34 + 40
Pickering Winery Supply–31
VINQUIRY–31
The Wine Lab–37

COMPUTER SERVICES
Data Consulting Associates,Inc.–22
Pickering Winery Supply–31
Jim Vahl–37

CONSTRUCTION (Buildings)
Beucon Building Systems–57

CORKS
KLR Machines,Inc.–10
Pickering Winery Supply–31
RLS Equipment Co.,Inc.–37
Scott Laboratories,Inc.–3

CRUSHERS / DESTEMMERS
The Compleat Winemaker–32
KLR Machines,Inc.–10
Process Engineers,Inc.–13 + 47
Prospero's Equipment Corp.–2
RLS Equipment Co.,Inc.–37

ENGINEERING SERVICES
Lescure Engineers–35
Oneto & Arthur Engineering–37
Storm Engineering–37

ENZYMES
Criveller Co.–34 + 40
GENENCOR–15
Scott Laboratories,Inc.–3

Supplier–Page No.

FILTER EQUIPMENT
The Compleat Winemaker–32
Criveller Co.–34 + 40
KLR Machines,Inc.–10
Process Engineers,Inc.–13 + 47
Prospero's Equipment Corp.–2
RLS Equipment Co.,Inc.–37
Scott Laboratories,Inc.–3
SEN Machines,Inc.–6

FILTER MEDIA
KLR Machines,Inc.–10
Process Engineers,Inc.–13 + 47
RLS Equipment Co.,Inc.–37
Scott Laboratories,Inc.–3
SEN Machines,Inc.–6
WITCO Chemical Corp.–12

FINING AGENTS
KLR Machines,Inc.–10
Scott Laboratories,Inc.–3
SEN Machines,Inc.–6
The Wine Lab–37

FITTINGS (Stainless Steel)
The Compleat Winemaker–32
Criveller Co.–34 + 40
Key Industrial Associates–30
Process Engineers,Inc.–13 + 47
RLS Equipment Co., Inc.–37
Santa Rosa Hydraulics–56

GRAPES, JUICE, MUST, WINES
Valley Farm Management–32

HOSE
The Compleat Winemaker–32
Key Industrial Associates–30
Process Engineers,Inc.–13 + 47
Prospero's Equipment Corp.–2
RLS Equipment Corp.–37
Santa Rosa Hydraulics–56

IRRIGATION EQUIPMENT
Irrometer Corp.–4
Rain Bird Sales,Inc.–49
The Water Works–37
Wyatt Irrigation Supply, Inc.–24

LABORATORIES (Agricultural Services)
Farmecology Labs–35

LABORATORIES (Materials/Wine Analysis)
E T S–50
Scott Laboratories,Inc.–3
VINQUIRY–31
The Wine Lab–37

NURSERY
M & H Vineyards–42
Schloss Tucker-Ellis–37

PERSONNEL SERVICES
Snelling & Snelling–37

PRESSES
The Compleat Winemaker–32
KLR Machines,Inc.–10
Process Engineers,Inc.–13 + 47
Prospero's Equipment Corp.–2
RLS Equipment Co.,Inc.–37
Scott Laboratories,Inc.–3
SEN Machines,Inc.–6

Supplier–Page No.

PROCESS CONTROL SYSTEMS
The Compleat Winemaker–32
Process Engineers,Inc.–13 + 47
Santa Rosa Hydraulics–56
United Electric Controls Co.–4

PROCESS PIPING
JV Northwest Engineering–20
Process Engineers,Inc.–13 + 47
Key Industrial Associates–30

PUMPS
Albin Pump Co.–39
Burkhart Industrial Sales–14
The Compleat Winemaker–32
Criveller Co.–34 + 40
Key Industrial Associates–30
KLR Machines,Inc.–10
Krogh Pump Co.–19
Process Engineers,Inc.–13 + 47
Prospero's Equipment Corp.–2
RLS Equipment Co.,Inc.–37
Scott Laboratories,Inc.–3

REFRIGERATION & COOLING
Pedia-Kreyer USA Inc.–5
Power Refrigeration Parts Co.–59
Power Refrigeration Parts Co.–47
Refrigeration Technology,Inc.–21

REPROCESSING OF CASE GOODS
Decanter USA,Inc.–23

SPARKLING WINE EQUIPMENT
The Compleat Winemaker–32
Process Engineers,Inc.–13 + 47
Prospero's Equipment Corp.–2

TANKS (Metal)
JV Northwest Engineering–20

TRANSPORTATION (Bulk Wine)
Tri-Transport,Inc.–41

USED EQUIPMENT
Process Engineers,Inc.–13 + 47
RLS Equipment Co.,Inc.–37

VALVES
The Compleat Winemaker–32
Process Engineers,Inc.–13 + 47
Key Industrial Associates–30

VINEYARD CONSULTING
Richard Nagaoka–37

WINE CASES (Wooden)
Classic Cases–11

YEAST / MALOLACTIC BACTERIA
E T S–50
Pickering Winery Supply–31
Scott Laboratories,Inc.–3
VINQUIRY–31
The Wine Lab–37

YEAST (only)
The Compleat Winemaker–32
Criveller Co.–34 + 40

Classified ads are on page 52.

The advertisers in this issue are listed above with their equipment and product offerings provided for your convenience. When requesting information from these advertisers, refer to their advertisement in this issue of *PRACTICAL WINERY*.

Glycol, ammonia, freon etc. We'll give you the cold facts.

When it comes to keeping cool there are many options and the correct choice could save you up to 40% in operating costs each year.

Most companies involved in wine refrigeration sell a glycol system. That's all. You shouldn't expect them to present an unbiased view of the alternatives with which they cannot serve you.

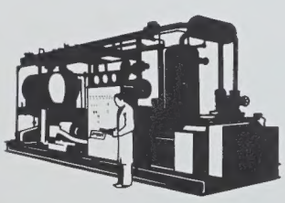
PRC custom designs every type of system, from the smallest chiller to the largest computer aided direct refrigerant tank farm—and everything else in between.

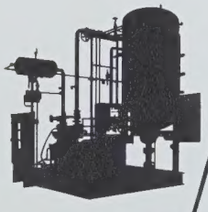
We will help you compare the alternatives, then you make the choice that's right for you. Get the collective engineering staff experience of over 150 years and the support of the company that helped to shape California's wine making industry for over 30 years.

Call Richard Curtis, P.E., for an appointment to talk about your special project.

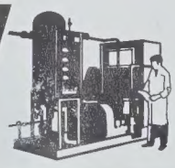
INDUSTRIAL REFRIGERATION
CONSULTING ENGINEERS
EQUIPMENT—FULL SYSTEMS FABRICATION—MAINTENANCE
24 HOUR SERVICE NETWORK

POWER REFRIGERATION CO. • 3466 ARDEN ROAD, HAYWARD, CA 94545 • 415/887-4105





PRC
POWER REFRIGERATION CO.
THE COLD PROFESSIONALS



"Flow Rates Twice as High... Product Loss Cut in Half ...Better Quality"

Tom Eddy
Director of Winemaking
The Christian Brothers
St. Helena, California

That's what happened when Christian Bros. installed a Westfalia CA 365 Decanter and a Westfalia SA 100 Clarifier. As a result, this famous winery was able to eliminate filtering of juice to stop fermentation.

Prior to installing Westfalia equipment, says Mr. Eddy, "Our flow rates were approximately half...Juice losses in solids were about twice as high and final clarity needed to be significantly improved."

Now: "Our product losses have been cut by one-half to two-thirds. Previously about 10% of the feed was lost; now only 3–5%."

Christian Bros. takes a Westfalia team approach. The Decanter clarifies fresh juice. The Clarifier handles peak load overflow and also extracts solids and yeasts in actively fermenting juice—for precise control of fermentation. All these results are achieved without filters or diatomaceous earth.

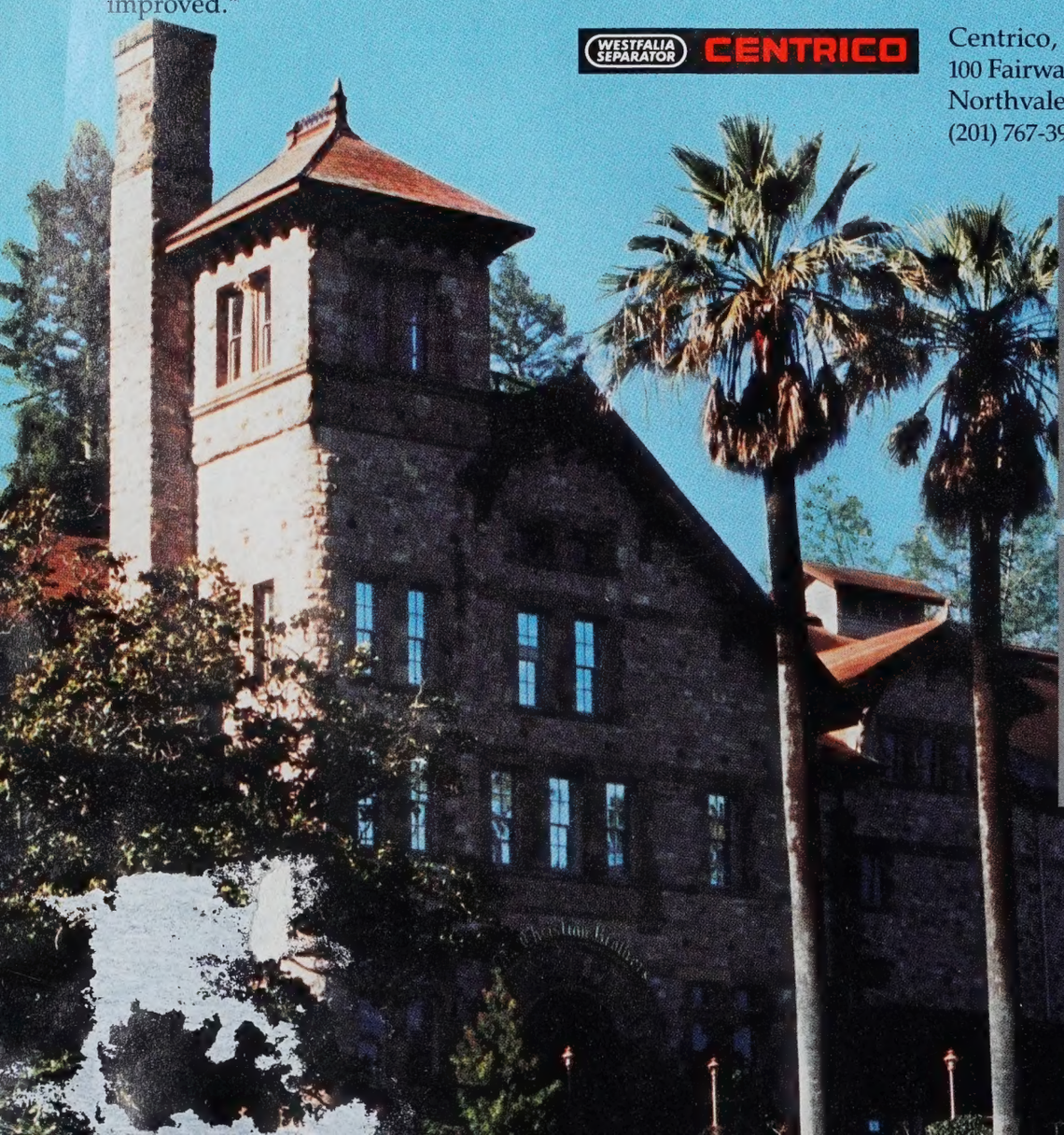
The bonus: Far greater capacity, greatly enhanced by the efficiency of continuous, uninterrupted processing.

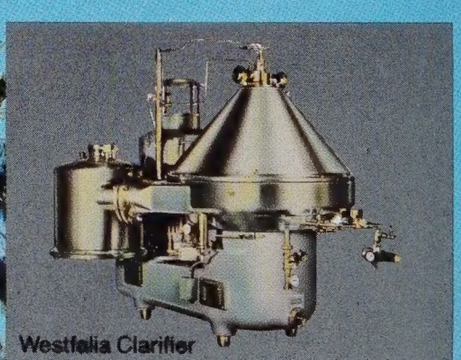
You can join Christian Bros. and the 250 other wineries that are enjoying the benefits of Westfalia "Wine Design" Centrifuges. No matter how big or small your operation is, you can satisfy your capacity requirements by choosing from eight Self-Cleaning Clarifier and seven Decanter models.

WESTFALIA SEPARATOR CENTRICO

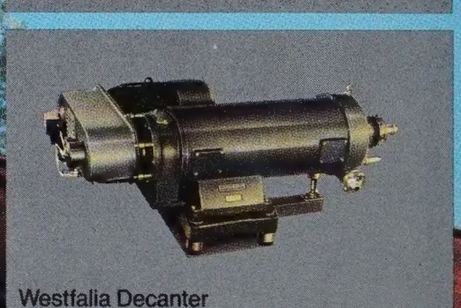
Centrico, Inc.
100 Fairway Court
Northvale, NJ 07647
(201) 767-3900

Centrico, Inc.
3400 Third Avenue
Foster City, CA 94404
(415) 349-8900





Westfalia Clarifier



Westfalia Decanter